AMERICAN

Journal of Mining,

Milling, Oil-Boring, Geology, Mineralogy, Metallurgy, etc.

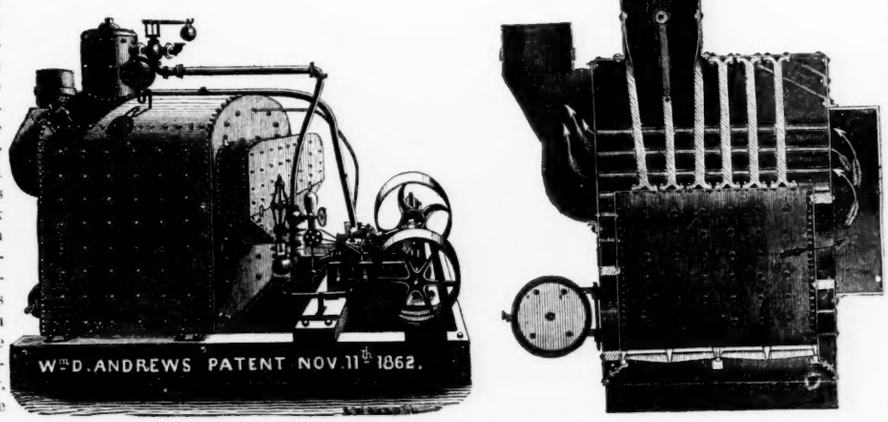
VOLUME I.
NUMBER 15.

NEW YORK, JULY 7, 1866.

$4 A YEAR IN ADVANCE.
SINGLE COPIES TEN CENTS.

PORTABLE ENGINES.

This week we devote the illustration on our first page to Andrews' Portable Steam Engine. The engines furnished with these portables are Andrews' patent Oscillators, which are claimed to be the tightest, most compact and simple in the market. The workmanship is first-class, and the peculiar arrangement of the chests and cylinders, dispenses with all slide valves and eccentrics and their friction, and enables them to run it to a dam, with less loss of power than any engine made. The engine and boiler are connected by a wooden frame as shown in the accompanying cuts, avoiding the necessity of tupping into the boiler, and the difficulties experienced by the unequal expansion and contraction when attached directly to the boiler. It also lowers the centre of gravity, making the machine stand much firmer, and is more convenient and comfortable for the engineer. The boiler and engine are each complete in themselves, can be quickly and easily detached, and used separately—the engine requiring no special foundation—but can be fastened to any floor or post, and run equally well. Each is supplied with an independent steam feed pump, and a tubular water heater attached to the boiler. The boilers are tubular of such compact form, that when the engine is attached to the end as shown, the entire length is no greater than a locomotive boiler of the same capacity. A combustion chamber is formed in the back breeching, supplied with fresh air through graduated openings at the bottom, by which means every particle of carbon is consumed from the fuel, and no smoke escapes from the chimney. Even when using pine wood or bituminous coal, the gases escaping from the chimney, have a temperature very little above that of the steam in the boiler. The boiler is very plain, easy of access to all its parts, and remarkably safe. The fuel is thoroughly consumed, and its heat imparted to the contents of the boiler, as is proved by the absence of smoke, and the low heat of the escaping gasses is evidence of great economy, which is corroborated by parties using them. Eight sizes are made, from three to twenty horse power. Engines, both single and double, are made, up to two hundred and fifty horse power, and boilers up to forty horse power. Several hundred are now in use, giving excellent satisfaction. The manufacturers claim that their compactness, lightness and simplicity, peculiarly adapt them to mining purposes; the saving on freight, in many instances, equalling the cost of the machine. For descriptive pamphlets and price lists, address Wm. D. Andrews & Bro, No. 414 Water street, New York.



ANDREWS' PORTABLE STEAM ENGINE.

A chalk mine has been discovered in Iowa.

Condensed Facts as to Sodium Amalgam.

Sodium amalgam, used for securing the fine particles of gold after the quartz has gone through the mill, is made up into circular flattened lumps and packed for carriage in water-proof covers. Sodium, one of its components, is violently explosive on coming into contact with water; mercury, the other component, is liable to loss from breakage of bottles. Hence, shipping the two, combined into sodium amalgam, appears to be an admirable method of avoiding all risk. But the recent accidents with chemical substances have created a certain nervous feeling in the public, and the statement has frequently been made that sodium amalgam is explosive. We can only say that hitherto there has been no explosion caused by this substance, and have seen it thrown into water without perceptible effects, except a slight, gradual decomposition shown by a few bubbles of escaping gas. Sodium by itself, however, is explosive; what strength it has, as compared with gunpowder, gun-cotton or nitro-glycerine, we believe has not been ascertained. The substance itself was discovered in 1807; its cost then was $2 00 per pound. Deville produced it at 1 00 per pound, and it is now known to be one of the most common metals—since each 100 pounds of common salt contains 39.3 pounds of sodium. Sodium is a soft substance, and when cut with a knife presents the lustre of silver, but tarnishes instantly, and when exposed to the air rapidly absorbs oxygen and crumbles away like slacked lime. It is kept in naptha, a fluid which contains no oxygen. It has nearly the same specific gravity as water; if placed on the water it floats on the top, and sometimes gradually consumes without explosion. If a slight tap is given it, it takes fire and burns brilliantly. Recently a large piece of the metal sodium was tied to a stone and thrown into the river; it sank at once and no visible explosion resulted. A piece tossed upon the water immediately exploded, throwing up a column of spray and covering the surface with brilliant burning globules. Placed in a small earthen vessel, it blew a hole through the bottom; wrapped in paper, it floated on the surface for some time, and then set fire to the paper and exploded. Certainly, until sodium amalgam has become a familiar substance, it is well to watch it closely and be careful in its transportation and use; but hitherto not the least sign of dangerous tendency has been shown by it.

Diamonds in the Southern States.

Attention has been drawn to the discovery of diamonds in the Southern States by Baron Humboldt, and by Dr. Stevenson, of Georgia. The greatest number have been found in Georgia, on and near the immense belt of itacolumite, which traverses Hall county. The first found was in 1833, in White county. It weighed ½ a carat, or 2 grains—was of the "first water," a perfect octahedron, and without incrustation. Four others were found at about the same time, and several splendid ones between that time and 1840, in the washings in Hall county, some of which were worth $1000. Two of these—one set in a breastpin, worth $500, and one in a finger-ring, value $300—are in the possession of Dr. Hamilton, at the Astor House. A poor miner, knowing nothing of the value of diamonds, having sold his day's work of gold dust for $1 00, gave away one of these glittering stones into the bargain, the stone being really worth $500! Two other miners broke up with their hammers a diamond supposed to be worth over $100,000 in order to see what made it so brilliant! They afterwards sold one of 1½ carats for a dime, its real value being probably over $100. Diamonds are usually found among the last washings for gold. Dr. Stevenson, in 1861, put up machinery, near Gainesville, to work exclusively for these precious gems. He had got his works completed, and had washed about two weeks and found five small ones of inferior quality, when his hands were taken away for the army. It is proposed, he says, during the year, to attach a few skilled hands to the gold washing machines, and so settle the question as to whether diamonds can be found in sufficient quantities to pay for working. That they have been thrown away in great numbers hitherto is believed by many, as, indeed, were all the diamonds found in Brazil, until a Portuguese merchant, who was visiting the gold washing, unexpectedly found a diamond of immense value among the heaps of gravel and sand thrown aside. Keeping his counsel, he continued his search for a few weeks, and found enough to bring him *four millions* of dollars when he got home. Fearing to return, he sent his brother back, who soon was equally successful, but being suspected of something wrong by the crown officers, he was arrested and put in prison, upon which he confessed his mission, gave up his booty, and was taken to Portugal where he was liberated by the king. The whole district was now ordered to be re-washed for diamonds. It yielded from 14,000 to 20,000 ounces per annum, at

least four-fifth of which were of inferior quality, and used only in the arts before stated. From 20,000 to 60,000 hands have been employed. Not many years since some French chemist, in analyzing the accompanying minerals, found what are called black diamonds, now known to be uncrystalized carbon, but so nearly pure that it is valuable as a polisher of other stones, and sells for seventy-five cents per carat. It was preciously thought to be nothing but iron ore or schorl. That discovery has led to the washing of the ground over a third time, which proves to be very profitable, as it is said to be abundant. Dr. Stevenson says fine amethysts have been found in Hall county, Forsyth and Columbia; the topaz in Lumpkin; the carnelian in Rabun; the beryl in Clarke, and the Lozulite in Lincoln, accompanied with splendid crystals of rutile, some weighing twelve ounces. The zircon, in great purity, is found, as an accompaniment of the diamond, all along the belt of itacolumite. The kyanite is found in Elbert county, and the chalcedony is associated with the carnelian in Rabun county, as also the amianthine asbestos of great strength of fibre and over two feet long. The garnet is abundant, but everywhere of very poor quality. No emeralds have been found, nor sapphire. The opal abounds in the middle counties. The precious or fire opal, however, has only been found in South Carolina, where some valuable specimens were obtained by the late Dr. Andrews, of Charlotte, N. C. Judge Peck, of East Tennessee, found a small emerald in Hawkins county. The ribbon jasper is abundant, and pictorial marble of great beauty.

Borax.

The borax of commerce has hitherto been mostly manufactured from boracic acid obtained in Tuscany. The acid and soda conjoined and chrystallized has been found in limited quantities in Thibet and China. But the deposit at Clear Lake in California is much more abundant, and of remarkable purity. As taken crude from the earth, it is pronounced superior to the best English refined borax. "Borax Lake," as it is termed, is about two miles in circumference, surrounded by high hills, and serving as a reservoir for the water that falls in the rainy season. In summer the lake is quite shallow, and lumps of crystallized borax are taken out of the mud. And after the crystals are extracted, the mud itself is found for a depth of several feet, to contain more than eleven per cent. of borax. And so deeply has it penetrated, that when an artesian well had been sunk sixty feet, borax was still found in the mud, even at that depth

Iron Filings, Magnetic.

Iron and steel filings and turnings are stated by M. Griess to be strongly magnetic. Most working engineers have observed that iron filings will generally adhere magnetically, to the edge of a chipping chisel. But the long spirals of metal turned off in the lathe, are more especially strongly magnetic. Their polarity is permanent, and they act like true magnets. The spiral chips of soft iron possess this remarkable property in a high degree. The extremity of the chip first touched by the tool, becomes the south pole, while the opposite end, where the lathe finishes the chip, becomes the north pole. The direction of the spiral is stated to have, also, a certain influence on the intensity of the polarization thus produced.

New Route to Idaho.

A new company has been organized in California to run stages and wagons—for transportation of passengers and fast freight—from the town of Chico, Butte County, to Boise city, Idaho. The general route is from Chico, via Susanville, Ruby city, to Boise. The amount of capital stock is $200,000, in shares of $100. The principal place of business, and the business office of the Company is to be located in San Francisco, and the place of active business to be in the town of Chico, Butte Co., California. The San Francisco *Flag* thinks that the successful opening of this long contemplated route from California to the mining districts in Idaho and Montana will form a new era in the public enterprise of the day.

A Stream of Malachite.

A malachite stream is said to have been discovered in Cornwall. A stream of water issuing from several lodes of hematite, and white iron ore has suddenly changed its appearance from the red oxyd of iron to the strongest copper or mineral water ever seen probably in the county; in fact, the whole beach where this stream runs over, and everything it comes in contact with, are as green as malachite, to the astonishment of every one who has seen it, and quite a sensation has been caused in the neighborhood. The inference is that something volcanic has occurred, and that this water is issuing from a great deposit of copper ore not discovered in some of the parallel lodes.—*London Engineer.*

Mining Summary.

California.

Nevada.—The *Transcript* of May 27th says: The American Company at Sebastopol, on Thursday, set off a blast of 510 kegs of powder—12,750 pounds. The cost of this blast in powder alone amounted to about $2,300. A large number of persons congregated upon the banks opposite the one in which the blast was put, to witness the effect of the explosion of so much powder. The drift in which it was placed was in about ninety feet, and the bank to be raised one hundred and fifty feet high. The fuse was forty-five minutes in burning before it reached the powder. When the explosion took place, with a dull thud, it shook the ground like an earthquake. The immense mass of earth rose suddenly a few feet, and then crumbled away. . . . A gentleman of great experience in mining, hearing of the reports of the successful working of the Blue lead in Little York township, took occasion during the present week to visit the more celebrated mines, to examine and satisfy himself as to the character and permanency of that kind of mining. He returned here with "cement on the brain." In Brown & Co.'s mine, at You Bet, he was shown through the tunnels, drifts and chambers, by Judge Brown, and was astonished at the great extent of the works. As they were about leaving the mine, the Judge said to a workman, "Dig us out a specimen." The workman struck his pick into the blue bank near the bed rock several times, and picked up the pieces knocked out, and handed them to the visitor. He says they were literally covered with coarse scale gold. This company are making about $2,000 per week over expenses, with an eight-stamp mill. He also visited the celebrated Neece & West cement claim. The drifts and chambers are worked in this mine eighteen feet in height—the lead being taken out for that space, and the supporting timbers are of that length. The inner excavation looks like a large cave. The lead pays to crush the whole height excavated. By moving a candle along the wall of cement the gold can be seen here and there shining on the surface. This company have cleared $50,000 during the last four or five months, and are making large profits. There are fifteen cement mills in operation on the Blue Lead, and all but one paying handsomely. The latter, Clay's, can hardly be said to be in operation, as the lead has not yet been struck in its claims. The finest mill is that of Cozzens & Garber, half way between Red Dog and You Bet. The Gougeye mill was started last week, and made a handsome showing above expenses the first week. Jacobs & Sargent's mill is fast going up, and will be in operation by July 4th. These gentlemen intend to have several others erected before next fall. They have a mile of the Blue Lead in their claims. We do not believe there is a mining operation in the world that pays so uniformly, or where such extensive works are possible, as the great Blue Lead of Nevada county. . . . Until recently the opinion that no very rich placer claims of any extent could be found at great altitudes, seems to have been pretty generally accepted by miners, and therefore little prospecting for mines of this character has been done in such localities. The recent discovery of placer diggings, which rival those of 1849 and '50 in richness, above Eureka, in this county, and just across the county line in Sierra county, prove the falsity of this opinion. Great excitement exists in Downieville in consequence of the strike made in that county, and the "burg" has almost been depopulated for a time. The gravel in the new mines is from four to five feet in depth and the gold is coarse. The valley in which these claims are located has been prospected for more than a mile, and seems to be very rich throughout its whole extent. About one thousand claims have already been located. The two men who first discovered these mines, in a run of two weeks took out $7,000 above expenses. One nugget has been found worth $1,100. Such a chunk from South America or the lower regions would carry off thousands from this State. . . . Jacobs & Sargent have made a contract for a ten-stamp mill, pump and hoisting works for their Green Mountain cement claim at Quaker Hill, and the works are to be immediately erected. These claims are in the heart of the Blue Lead, and have been tested by previous work sufficient to show a fine body of paying ore at once available.

Alpine.—The *Monitor* of June 2d, says: The drift running for the second chimney in the Morning Star claim is now one hundred and eighty feet from the point where the ledge was first struck, and has only about seventy nine feet more to run. . . . The work of cutting across the American lode, by the American Company, is progressing finely, the cut being in about twelve feet. Several stratas of fine-looking ore have been discovered, and the whole body of the lode contains gold and silver in greater or less quantities, with copper and lead in large bodies here and there throughout. . . . The Silver Mountain Company are running alongside their ledge, which will be cut after going twenty-five feet further, and bids fair to prove one of the largest and most valuable claims in the district. . . Work will soon be resumed by the Lady Franklin Company on the same lode of the Buckeye No. 2.

Placer.—The *Mining Press* of San Francisco says that private advices from Ophirville, a point about three miles below Auburn, Placer county, speak very encouragingly of the mining prospects of that locality. Quartz mining operations there, until quite recently, have been carried on very loosely. Some time last fall several experienced miners went in there, became satisfied with regard to the value of the mines, commenced operations on a more liberal and scientific basis, and the result has been most satisfactory to all parties concerned. We gave quite a full notice of these mines in our issue of the 13th of January last. They consist of a series of fourteen east and west lodes, crossed at right angles by six others, running north and south, all varying from two to four feet in thickness, and located from one to five hundred feet apart, Two of the east and west veins carry silver, specimens from one of which, taken from the surface, are said to assay $125 per ton. Two others carry copper, showing carbonates and oxides strong, on the surface, with sulphurets coming in gradually at fifty feet in depth. A company, known as the Ophir Tunnel Company, is now running a tunnel to cut all these veins in succession, which will be accomplished within the distance of 4,500 feet, the company to have a certain extent on both sides of their tunnel, upon each vein cut, for draining the same. Three or four mills are already in operation in this vicinity. We have a letter before us, dated at Ophirville on the 9th inst., which says, in substance, that two Danes have been digging on a small vein of quartz near the Scraggy Point copper shaft (on one of the copper veins of the series), and upon the line of the tunnel. They had already taken out about $3,000, having pounded out $1,000 last Saturday from twenty-five pounds of quartz. The lode they were on was but two or three inches wide, and lay between slate and granite—the hanging wall of the lead being the copper croppings. The party was down about twenty feet deep. They kept their success private as long as they could; but the tunnel company, on whose ground they were working, drove them off as soon as they learned what they were doing. One of the best of the lodes referred to is known as the Peter Walter Lode, some very fine specimens from which, showing large quantities of free gold, have been submitted to our inspection. The sulphurets from this mine are said to assay as high as $1,180 per ton. We understand that the tunnel property, with its twenty lodes of gold, silver, and copper, has been secured by a party of San Francisco capitalists; also the Peter Walter lead, which is a separate interest. Both of these properties will be placed in the New York market.

Yuba.—A new company formed in San Francisco is negotiating for certain gold claims on both sides of the Yuba and Nevada county lines at Empire ranche. To obtain a fall they propose to cut a tunnel seventeen hundred feet long, at an estimated cost of one hundred thousand dollars. This will give them an outlet for their tailings on the Yuba river, and sufficient fall to enable them to work the claims to the bed rock. The parties owning the claims ask $550,000 for them. The purchasers will be compelled to make an outlay of at least $700,000 before the claims can be opened. Should this project be carried out it will be one of the most extensive and expensive mining enterprises in California. The Blue Lead in the vicinity of Smartsville is exceedingly rich.

Calaveras.—The *Chronicle* of June 2d says: We learn that two of the richest quartz leads ever struck in this county, were discovered at Railroad Flat one day this week. We have not heard the particulars in regard to the width, etc., but our informant tells us that the surface rock is perfectly "lousy" with gold.

Butte.—An occasional diamond is found at Cherokee, says the Butte *Record*, although no regular search is made for them. Doubtless any systematic process by which they could be separated from the tailings and debris thrown out from the washings for gold would reveal them in profitable profusion. The one recently found in some tailings by Durette, is the largest that has yet been found in that vicinity. It is not a diamond of the first water, being of a straw tint, but it is nevertheless a veritable and valuable diamond.

Mariposa.—Travelling correspondence of the *Mining Press* runs thus: After leaving Bear Valley, I again traversed the Chowchilla copper district, and was enabled to form a much more complete and correct idea of its value than I had before. The furnace of Messrs. Henry & Co. I found still in operation. It had distanced the most sanguine hopes of its owners, having smelted four tons of pig copper daily, from silicate and carbonate ores, for several days in succession. It would be necessary, however, to stop in a day or two, I was told, as the ore on hand would be exhausted by that time. Haskell & Phillips, at Bachman Hollow, were also running their furnace; but the grade of ores on hand being very low, it was impossible to do good work. The ore was a mixture of red oxide and green carbonate, with clay and slate, which would probably assay four or five per cent. It was found very difficult to separate the metal from this gangue. One and a-half miles below the Bachman, on the north side of the river is the General Grant claim, owned by Messrs. Ault, Jones and Carton, who claim two thousand feet on a vein running in nearly east and west directions, across the stratification of the country, dipping to the north at an angle of forty-five degrees. The vein shows indications of copper at various points on the surface; but at the shaft, where it is opened twelve or fifteen feet deep, the surface croppings show no signs of metal of any kind. At a depth of four or five feet, however, silicate of ropper appears, followed by a blackish gray ore, having the appearance of containing large quantities both of copper and silver, while traces of antimony and arsenic abound.

Fresno.—Some one writing from Millerton, says that there is not a quartz mill in the county, and but one or two veins have been discovered, which promise to be of any value; but the placer mines on the upper San Joaquin are said to be immensely rich.

Amador.—The Hayward gold quartz mine at Sutter Creek, Amador county, is now returning to its owner, A. Hayward, Esq., upwards of $40,000 net per month. The ledge is a large one, and for several years while being worked near the surface, yielded only from eight to fifteen dollars per ton. It has now been worked for twelve years, and a depth of over twelve hundred feet has been reached where the ledge has increased in size, and now pays on an average twenty-five dollars per ton for twenty two feet in width of ledge. This has been represented as the richest gold mine in the world; but that is a mistake, as the Allison Ranche, and perhaps other mines of Nevada county, surpass in yield per ton, aggregate and net products. These deep mines have proved one thing, that gold, as well as other mines, increase in richness and size of vein mat-

ter as great depth is reached. The Hayward vein stands nearly perpendicular, and is encased in granite. There are two mills employed in crushing the ore, one of which has forty stamps of four hundred and fifty pounds each. These light stamps are driven at the rate of eighty strokes each a minute, which is found to be a far more effective mode of working than by using the heavy stamp, usually of six to seven hundred pounds and worked slowly.

Santa Clara.—The *News Letter* says: We have read, with much interest, the annual report of the Quicksilver Mining Company. It is satisfactory to find that the production of quicksilver at the mine of the company (New Almaden), notwithstanding the falling off in the richness of the ore, was, during 1865, in excess of any previous year. There were reduced during that year 31,948,400 pounds of ore, producing 47,194 flasks of quicksilver, each flask containing seventy-six and one-half pounds. Average per cent. allowing three per cent. for Tierras, 12.43. In 1864 the average was 16.40; and for the ten years preceding, 22.20 per cent. The production of 1865 was distributed as follows: Consigned to China, 14,250 flasks; London, 10,400; Peru, 5,500; Chile, 2,000; New York, 6,800; Mexico, 2,650; Australia, 200; Oregon, 280. The expenses in producing this result amounted to $800,000; but taking into consideration the quantity and quality of the ore, the cost of production is said to have been less than ever before known at this mine, and is below that of any quicksilver mine in the world.

Colorado.

Heretofore the complaint has been that Colorado didn't furnish enough mining news. Now there is enough and to spare. . . . From the *Journal* of June 19th, we condense as follows: At Trail creek, which empties into Clear creek, the Hale Gold Mining Co.'s mill is running. There is a double-and-twisted-jawed alligator for chawing up the quartz. It is on the same principle as Blake's, and works from the center outward, moved either way by a strong eccentric, the outer jaws being stationary, one them smooth, the other fluted. It looks as though it would make coarse gravel of a very large rock in a very short time, if fed up to its mettle. From this the quartz is shoveled into one of Lyman Kinsley's pulverizers. This is a cast-iron box, or tub, perhaps three feet deep and four over, with a chilled, revolving bottom three inches thick. In each side of the tub is fixed an axle, as if the axles of a wagon were broken in the middle, and the wheel end of each stuck through the rim of the tub and fastened there. The wheel that runs on these is a nine hundred pound cast-iron ball, which is turned by the revolving bottom. A small stream of water is fed in with the quartz, and as it is pulverized it runs out near the bottom, and is conveyed by a trough on to a Keith shaking-table for amalgamation. It runs like a hurricane, shakes the whole mill, and we are inclined to think won't be found to answer. The mill is a compact little frame, with engine and boiler on one side, quartz machinery in the middle, and circular saw and shingle machine on the other. The quartz comes from an adit running in on the lode—Kelley—and is brought down in a dump-car. The capacity of the institution is placed at a cord a day, and the quartz yields thirty to forty dollars per ton. It has just started. Along up the creek from the Hale Company's mill for a mile are arastras, turned by overshot water wheels. At this point the Freeman lode crosses the gulch, running north-east and south-west, opened for 3,300 feet on the south side of the creek under the name of Freeland, and for 1,100 on the other side under the name of Holman. For most of this distance there are two shafts on each claim, varying in depth from thirty to two hundred and eighty-five feet. All of this work was done with money taken out of the lode. We know of no other lode in the country which has been struck for so great a length on the surface. As we go up the gulch we see where the Colvin Gold Mining Company is excavating and quarrying stone for a new mill. Mr. Colvin is the agent, and he is now on the way out with a cracker, engine and boilers, and whatever is necessary for the establishment of a Keith process. They had a nicely curbed shaft down about sixty feet, with a fair crevice, and were sinking another. . . . Next above the Colvin is the Baltic mill—doing nothing. . . . Above this is the log mill of the Noble Gold Mining Company. The mill has two batteries of five 750 lb. stamps each, short plates and shaking table, like those of the new Black Hawk mill. At one end are set the engine and boiler, and on one side is a Crosby & Thompson desulphurizer neatly laid up in brick. Mr. Smith says he shall not start it until he hears something definite from the parent machine at South Boulder. He was opposed to putting it in, but was pressed to it by his friends in the company. He thinks, from the looks of his plates, that the whole institution is "going back" on him, unless indeed he can save it by the adoption of smelting. We fear Mr. S. is discouraged to easily. No one expects a new mill to save anything to speak of for the first four weeks. (Phew-w! Jour. of Mining.) The company has mines on the Freeland, French, Sarah, and other lodes which assay and prospect very largely. The Keith process will, without additional expense, and with far less original cost save 100 per cent. more bullion from the same ore than the stamps. But those who have been induced to spend their capital in carting here and building worthless machines, or machines whose worth is not yet demonstrated, must be expected to go slow for a while. We venture to predict a "good time coming" for Trail creek, from its visible resources and advantages as a mining district. . . . Spanish Bar is apparently going through another Whale-ing process. It is melancholy; for, we cannot consider the building of new mills where there are so many idle old ones, without developed mines, as any improvement. There stands the Whale mill, a mammoth and elegant structure, but after having engulphed a quarter of a million, unfinished and idle for these many months. A kiln of brick is being put up for the same process over. Mr. Lombard, who was here last winter from Chicago with a hot lead machine, appears by all accounts to have taken on a lot of undeveloped mines, so-called, from that vicinity, upon which he has formed two companies in Chicago, which have set Mr. Dumont to building them a mill each. Excavation and framing have commenced. Above is a handsome stone mill belonging to the Oro Company, located on the Oro lode. Mr. Myers is agent for this company, and is running an adit in on the vein and getting out very good looking ore. The mill has a Crosby & Thompson process, and was not running as we passed by. Lower down, W. E. Sisty is taking out a flume for his works at the mouth of Chicago creek. He has not yet decided what style of treating works he will erect. His mine on the crystal is looking finely, is being worked and turning out large quantities of ore, worth by actual test in the neighborhood of $80 a ton. Coming over the hill it seemed there was more mining, taking out quartz, going on near the top of the divide at the head of Russell, than anywhere else in the county. At the head of Spring Gulch some one has started one of the cheap quartz mills on the ditch, wooden stemmed stamps and water-wheel. We hope to see the day when the ditch will be enlarged, and half a hundred mills be running in these districts by its abundant water power. On the side of the Ford Gold Mining Company nothing of consequence is doing at the mills, finished and half finished, in Russell Gulch. Mr. Ford, at the head of the gulch, is building his smelting furnace, and will finish up a sixty-foot stack, containing four flues, as soon as he can get brick, two kilns of which are being put up in Russell. Mr. Ford's process contemplates the use of Blake's crusher and burr-stones for pulverizing, two of Collem's separators for dressing—all of these are up and have been run—a desulphurizing reverberatory and a smelting ditto. The latter is expected to have five or six tons a day capacity. Mr. Jobelin is building it, and it is as nice a piece of work of the kind as we have seen in the country. Mr. Ford made a good portion of his fire-brick himself, mixing in a large proportion of fire-stone, as he calls it, and subjecting them to 20,000 lbs. pressure. He evidently don't intend to have to rebuild his furnace too often. The stack is founded on the bed-rock, and is carried up with stone about twenty feet. There is a Crosby & Thompson cylinder set up on end for burning bones, a very good use for it, we should think. Mr. Ford hopes to be at work within three or four weeks. His mines on the Jefferson and Steward are looking very promising. . . . The same paper states that the Broadway Mining Association had raised $2,800, for the development of their Red and Iron Mountain property. . . . The *News* says: The assays from nine different lodes in Red Mountain, belonging to the Union company, yielded $125 per ton, the lowest being $12 per ton. We are also creditably informed that a lode near the Twin Lakes, the location of which can be seen on the photographs of Twin Lakes, yields nearly $1,000 per ton, about one-half silver. Assays from twenty Red Mountain lodes, made last fall by Behr & Keith, of Central City, yielded an average of over $100 per ton. . . . The *Journal* says that on last express day there were shipped about 1,080 ounces, the greater part of it through Kountze Bros. The Black Hawk Company heads the list with 235 ounces. . . . The *News* learns from Empire that it is filling up with new settlers. The old mills are starting up and new ones are being built or projected. Mr. Lepel has abandoned the Dodge process, with which his mill was originally supplied, and is substituting that of Behr & Keith. There is renewed activity all along the Clear Creek Valley. A great many new men are coming in and purchasing mining and mill property. Water powers, of which there are so many excellent ones along the stream, are coming into great demand. . . . As to Boulder, a correspondent writes: "Mining operations in Ward District have assumed an earnestness unknown before. The Ni Wot Company have a large force of men employed in their mines, and are completing their fifty-stamp mill with all possible despatch. They expect to have it running in two days, when they will make things rattle along at a brisk rate. They already have over a hundred cords of splendid ore on the surface, which, with that which will be produced by the labor of twenty miners, will keep the greedy monster well fed for some time. I do not wish to get you much excited, but I can't help saying when that mill starts you will get some facts that will set capitalists wild, and I expect G. W. or some other man over here with a press, immediately. The Long Peak Company, with a working capital of $50,000, Mr. Pomeroy, superintendent, is putting up a large stamp mill, and intends to add a desulphurizer of the most approved method. They have bought a large amount of splendid property, and propose to go honestly to work and get their money out of their mines. I am informed that a Mr. Hurd, who has been looking for a suitable location, intends to put up a twenty-stamp mill at once. His mill is now in Denver." . . . The *Register* of June 19th says: Dr. Blue, who commenced work a week ago, made his first shipment on Wednesday. . . . The shipments by last express and purchases by the several bankers of the town, foot up the nice sum of eighteen hundred and one ounces sixteen pennyweights and two grains, for the week ending Tuesday, the 12th inst., and is parceled out as follows: The Black Hawk Gold Mining Company, 225 ounces; Kountze Bros., bankers, purchased and forwarded for private parties 969 ounces; the Gunnell Company, Mr. Fitzpatrick agent, 150 ounces 5 pennyweights; the First National Mining Company, T. R. Rodman agent, 52 ounces; the Kansas Colorado Company, 28 ounces; Warren, Hussey & Co., bankers, about 40 ounces; the Narragansct Company, 88 ounces, 1 pennyweight and 12 grains; John Sensenderfer, 74 ounces, 11 grains; Geo. T. Clark & Co., bankers, have on hand of their own and on deposit, 175 ounces. . . . With Lyon's smelting works and Behr & Keith's process, we have no fears but that the mines will be worked extensively this season, and the yield of the precious metals greatly increased over previous years. An *on dit* is that Mr. Lyon will be home shortly, and that operations at the works will be pushed, and perhaps furnaces in other parts of this and adjoining counties erected. . . . A. M. Cassiday, who is just in from Georgetown, speaks very encouragingly of matters there. He has a wide crevice of argentiferous galena, four men being able to take out twenty-four tons of ore per day. The ore is pure sulphide and free from quartz or rock. His company is putting up a smelting furnace, which will be in running order in a few days. . . . Lyon's last shipment of precious metals, made last Wednesday, is reported at 47 pounds. The proportion of gold was much larger than in any former ingot. . . . The Montana Gold Mining Company have lately furnished Mr. Lorah, at present representing the company here, with funds to liquidate a portion of its indebtedness, and instructed him to send for more if needed. They propose to resume operations before long. . . . On Monday, the 11th inst., the Hardesty and Hussey properties, on the Burroughs lode, consisting of two hundred and fifteen feet, together with one hundred and twenty feet on the Missouri, two hundred feet on the East Kansas lode, and five hundred feet of outside property, was sold for upwards of one hundred thousand dollars, and the cash paid down for it. The sale was made and the purchase money paid here. The property is an excellent one, and worth all it cost. The Burroughs has long ranked as one of the very best lodes in Colorado, and the same may be said of the Kansas and Missouri. If worked with care and economy, the property must pay largely. Without these two qualities of management no enterprise is likely to succeed. The Casey property on the Burroughs lode, however, was an exception to this rule. It will be remembered by every old resident here how reckless Mr. Casey managed, and how little of economy and care was brought to bear, and yet he was successful far beyond any recent attempts at mining. The property sold is near to it, and well opened, showing good bodies of rich ores ready to be taken out.

Nevada.

The Comstock.—The San Francisco *Weekly Stock Circular* for June 2nd, states that: Crown Point rose to $1,050, receded to $1,000, and then sold at $1,005@$1,000. During the week ending 26th ult., 594 tons 2d class, and 55 tons 1st class ore were extracted from the mine. The latter is taken mainly from the winze sunk below the 300-foot level, at a point within 60 feet of the north line. No other new developments have been made lately. The shaft is now down 420 feet, and a station is now being prepared for the new or 4th level. Receipts of bullion for the month of May will approximate $110,000, and the regular dividend will be declared on the 9th inst., leaving a large surplus in the treasury of the company. . . . . Savage declined to $835, rose to $926, buyer 30, then sold at $882, and closes at $800 bid. Advices from this mine continue favorable, and the ore product is averaging 80 to 90 tons per day. The present yield of the lower or 6th level is expected to be steadily maintained for some time hence, and an increased production is anticipated from the upper levels. The old shaft is down 60 ft. from the lower level, and in drifting north (from the 6th) some 30 feet, a seam of ore has been met with. A further continuation of this drift will, it is thought, reach the body of ore found in the Gould & Curry. In the Curtis shaft, good progress is being made with the two southern compartments. A drift has been commenced at a point corresponding in level with the 7th station, old shaft, and is now in 25 feet. This is to reach the vein near the Hale & Norcross line, and about 70 feet above their 700-foot level. Receipts of bullion for the month of May amounted to $115,000. . . . . Hale & Norcross has been well sustained at $975@$965, and closing at $960. There is a new feature in this mine—the different floors north and south (from the 7th level) still present a flattering appearance, and certain portions are producing a better quality of ore. The yield of bullion for May will amount to some $65,000, and the usual dividend will be declared next week. . . . . Gould & Curry was dealt in at $730, cash, buyer 30, closing at $710 bid. There are still 50 feet of the south drift (from the south branch, 2d station) to clean up before the face can be reached. The east drift of the south branch (2d station) is still in quartz. The ore chambers above continue to hold out well, and a large quantity of ore is being piled up at the mill. Receipts of bullion for the past month amounted to $160,000, and the Company have now at their credit a balance of $107,000, with no liabilities. . . . . Yellow Jacket rose from $600, seller 30, to $690, buyer 30, receded to $661, and sold yesterday at $585 and $525. We have no official advices from this claim this week, but are informed that there is no improvement to note in the quality of ore extracted recently, most of it being of low grade. . . . . Ophir has been dealt in to the extent of some 400 feet, advancing from $385 to $425, buyer 30, dropping steadily to $280, and then closing at $300. We can learn of no favorable feature as to the present appearance of the lower level, and the body of ore in the 6th is said to be "fair" but "base," meaning probably not as intrinsically good as it would seem to be, or, other words, unreliable. Receipts of bullion during the past month amounted to $84,000. . . . . Chollar-Potosi fell from $300 to $295, rose to $330, fell to $290, and sold yesterday at $270@$165, and closing at $185. The upper slope of the Bajazet ground is said to be looking well, and discloses a large body of ore. In drifting 18 feet east from the New Santa Fe station a little ore has been found, and the Belvidere mine continues to yield some 25 tons of good ore daily. The new station drift (from the shaft) is in about 430 feet, "the end having passed through a soft mixture of porphyry and clay." During the week ending May 26th, 693 tons of ore were sent to custom mills. This company has now a supply on hand of some $20,000, all liabilities being paid. . . . . Belcher rose from $200 to $230, fell to $165, and closed at $130. Within this range 140 feet were sold. Alpha reached from $320 to $290, and closes at $250 asked. Empire Mill and Mining was sold at $160, seller 40, but is now well held at about $165 per share. . . . . Imperial has been held to within a range of $120 and $92½, closing at $92 bid. Receipts of bullion for the first three weeks of May amounted to $39,200. The damage done to the dam at Rock Point mill is being repaired at a cost of some $4,000. . . . . Overman has been very active, and nearly 1,200 shares were sold, dropping to $25, rallying to $41, falling to $23, and selling yesterday at $23 and $24,

Bullion has been dealt in within a range of $86 cash, and $60, seller $30, closing at $49. Confidence was sold at $35@$50, Exchequer $10 and $8, and Sierra Nevada at $5@$5.

Humboldt.—The *Register* of June 2nd, says: Our Arabia is blest with excellent mineral lodes—hundreds of them—and would be twice blest, if once a good system was in force, whereby the metal of her veins could be turned into the trade arteries of the world. At that point she hangs snagged. The smelting furnaces have worked well, till the miserable material employed in construction has given way. A mistaken policy, we think, and have frequently urged, was the plan to reine the metal from these argentiferons ores at a point where facilities are so poor and all the expenses so high. In England, the base metals containing a large percentage of silver and gold are worked on a large scale, and the base metals usually pay all the expense of separation. Here, it will take a large proportion of the precious metals to defray that expense, and the base metals are practically almost valueless. The metal is easily run from the ore into pigs. No great heat is required for that. The pigs form an admirable character of back freight for teams bringing goods from the railroad. The coarse metal can be shipped to England, an advance being made by agents in San Francisco, for about what the working costs here—leaving the base metals a clear profit, and in a good market. Thousands of tuns of these ores lie in sight, in the Montezuma, Jersey, Daisy, and neighboring ledges. We are glad to learn that parties understanding what is wanted in these Arabia mines are negotiating with capitalists in England for means to open and work several of these valuable ledges. No better showing of rich ores, so easy to bring to the surface, is found in the country; and these are of the peculiar character so successfully treated in England. . . . . In Woodman's canon, 55 miles up the river, good prospects of wash gold have been found. An Indian led parties to the place, and by pan process they washed out prospects as high as 4 bits. . . . . The Rochester company with Chris. Lark as Acting Superintendent, is putting work ahead with commendable zeal and industry. It is gratifying to see this company taking a course which will prove the Montana ledge beyond a doubt.

Montana.

The Virginia City *Democrat* of May 24th says of Alder Gulch: Monday evening, in company with a number of our citizens, we went down to the claim of Blake & Co., opposite the foot of Wallace street, to see them clean up. This company are engaged in ground-sluicing on a claim which had already been drifted. When we reached the claim, the ground immediately above the sluice boxes was sprinkled over with particles of fine gold, and a few handfuls taken up, were panned in a few minutes, and produced over two ounces of pure gold. The clean-up of six days' work of four hands, yielded the sum of $1,829 15—over 100 ounces. We saw the gold taken out of the sluice boxes and in the pan. This claim was bought by Blake & Bro., some six weeks ago, for $300. There is but very little expense attached to working this claim. When the fact is considered that this was only the result of ground-sluicing a claim from which the best pay dirt was drifted last season, the results are very encouraging. It is true that much larger amounts have been cleaned up in this and other gulches, yet it exhibits the fact that there is as much gold now in Alder Gulch as was ever taken out. In fact, along on this bar there are hundreds of as good claims, which only need labor and a little capital to develop rich deposits of gold. Not far below the claim of Blake & Brother, is the "Bummer Dan" bar, which is full of gold, and on which work is going on. In fact, all along Alder Gulch, on the bars, there is work going on, the Ditch Company supplying plenty of water, and there is new life and energy displayed by the miners. We now say to California miners, and all others who want to dig for gold, that they can come here with a certainty of doing well—in fact, much better than any other mining camp in Montana. There is bigger pay. Added to this, there are good diggings at Wisconsin gulch, some 15 miles from here. Granite gulch, which empties into Alder some four miles below Virginia city, is being worked, and those who have claims there are in high spirits, and believe it will pay big. . . . The *Post* of the 26th of May says: On Wednesday last we turned our steps up the mountain slope rising from the foot of Wallace and Cover streets, determined to examine the ground-sluicing apparatus of Ellis, Blake & McEvily, which has turned out about $2,016 as the first clean up of five days' work. The fall of the water is direct, over twenty feet in heighth, and of volume sufficient to wash away all obstacles to sluicing. Immediately above this company's claim is the Nelson Mining Company's steam hydraulic works, which are now giving substantial evidence of prospective remuneration for the large outlay of the association. The engines are to be coupled in action, and the nozzle is to be of double the diameter of the one now employed. This will insure successful operation; for the ground is very rich all along the mountain side, and, as the elevation of the ditch and the quantity of the water are sufficient, the palmy days of Alder Gulch will surely be renewed on a grand scale. Not less than ten companies of California miners are organized, and one Missouri company, each having its aqueduct running from the main ditch towards the bar below, on a trestle work, giving amply sufficient fall for mining purposes, or else ground-sluicing from the same ditch. The hydraulic works actually in operation are those of Messrs. John Chiles & Co., below those we have mentioned; the jet is supplied by an 8-inch hose, and is very effective, the stream dislodging and tossing about 50-pound boulders with ease. Isaac Meyers is nearly ready to start, and so are the Missouri Company, Thos. James and David Day, and several others below these. Matthew Rogers was to commence work on Thursday at ground-sluicing, and, generally speaking, we feel happy in this beginning of good things. One fair weeks' work will fetch a stampede to Alder Gulch, and revive the still fresh memory of its astounding wealth. There are miles of bars to be worked by these methods, with excellent pay for all hands. Every foot of the ground available, in this immediate neighborhood is now either bought or its ownership eagerly sought by rival purchasers. . . . The Helena *Radiator*, May 21st, says of McClellan and Lincoln Gulches: James Kennedy, expressman from Blackfoot City to McClellan Gulch, informs us that the gulches in that vicinity are turning out better than the most sanguine anticipated. McClellan has been mined all winter. It affords good facilities for drifting, and in consequence of which much dirt has been washed during the winter. Lincoln Gulch has proved a success; the gulch generally pays well. One party has been offered $4,000 for a third of the dirt taken from one drift during the winter. Also Keep Cool, as well as many others, are yielding finely. . . . Jefferson Gulch has surpassed the most sanguine expectation. No doubt exists but there will be fabulous piles of gold dug out of the gulch this season. I have seen a nugget taken out to-day by Frank Ireland & Co. that is valued at $275 25, the largest one found in this gulch, I believe. This company are taking out a fortune very speedily, I am informed. Many others are doing equally well in this gulch. Mr. Waite, in digging a drain ditch to his claim, picked up $1,060 without sluicing or washing the dirt. He has saved his dirt, and intends washing it. He thinks it will yield more than double the amount he picked up in the ditch. Mr. Martin, on the claim immediately adjoining the one above mentioned, rocked out $54 89 is less than two hours with a small hand rocker, and no one to help him. . . . Through various sources we are informed that the Elk Creek mines are proving a success. Each trip of our expressman, Mr. Ennis, brings the glad tidings that all is hopefulness in that quarter. Many have commenced sluicing, and the returns for their labors are beyond their most sanguine expectations.

Pennsylvania.

Josiah Conley writes from Pittsburgh as follows: Few of the people of this State have any conception of the vast and exhaustless stores of mineral wealth which lie undeveloped in the mountains and hills of Western Pennsylvania. In the valley of the Allegheney large fortunes have been made on comparatively small tracts of land, which, within my recollection, were purchased for fifty cents per acre; and still their mines are not exhausted. Some twenty years ago the little township of Brady's Bend, in Armstrong county, then a part of a large township, was regarded as of very little value; for it was rough, hilly, wild and uninviting. But an intelligent stranger saw what lay beneath its forbidding surface, organized a company in a distant city of another State, purchased a few thousand acres, and on that ground there now stands one of the largest, most complete and successful establishments for the manufacture of railroad iron in the country; and at this moment there is found in those once desolate, but now remantic ravines and little valleys, and on the sides of those hills a numerous, orderly, well-paid and industrious population. The rolling-mills, warehouses, etc., are situated on the banks of the river, while the furnaces are some three-quarters of a mile up a romantic little stream. I have spoken more particularly of this establishment, merely to show what can be done in the valley of the Allegheny. There are hundreds of other localities just as well supplied with coal and iron ore as Brady's Bend, and many a great deal better. Some of them are improved more or less, but by far the greatest part not at all. The coal at Brady's Bend is good, the veins of fair average thickness, and the ore mines apparently inexhaustible; but these are features common to many other localities on every side of that one. In fact, coal abounds in all the region lying between the Alleghany river and the elevated region where the eastern tributaries of that river interlock with those of the Susquehanna, and also on the latter. In some localities it exists in enormous quantities. On the eastern side of Jefferson county there is a vein of bituminous coal from ten to twelve feet in thickness. On the Redbank, a few miles below Brookville, a vein of eleven feet was recently discovered, in boring for oil, about sixty feet below the surface, while at the same time there are two other veins which crop out of the hill sides, one of four feet and the other of six, making in all over twenty feet of coal. Iron ore abounds everywhere through that region. The people are still confident of finding oil, and most of that part of the country is excellent farm land. I have spoken more particularly of the Redbank; but that of the Clarion, the Mahoning, the Cowanshannock, Crooked Creek, and in fact all the east side, are equally rich. It is in fact a region of perfectly inexhaustible wealth, in which hundreds of works like that of Brady's Bend might be established were there proper avenues opened to market. Brady's Bend has the river, but the largest and best deposits of mineral treasure have no avenues through which a market either east or west can be reached. I may remark, in passing, that all the strata on this side of the mountains are nearly horizontal, and continuous for long distances. This is alike true of coal, iron ore, and most of the rocky strata. The country on the west side of the Allegheny is equally rich in minerals, especially Armstrong, Butler, Mercer and Lawrence counties. In Venango and Crawford, near their southern borders, there is some coal. In Erie and Warren I believe there is none. But in the four first-named it is exceedingly abundant and of excellent quality. The heaviest deposits are found in the northern part of Butler county, where, in some places, three veins of five, six and ten feet, are found cropping out one above another. In the valleys of the Shenango and the Mahoning (but not the Mahoning before mentioned) semi-bituminous coal, admirably adapted to the smelting of iron in a raw state, is very abundant, and is extensively used in the manufacture of iron, and is largely shipped by rail and canal to Erie and Cleveland. The Pittsburgh and Erie railroad runs through the entire length of the Valley of the Shenango, as also does the Pittsburgh and Erie Canal, and the effect of these admirable means of conveyance is everywhere apparent. There is not a section of our entire commonwealth which exhibits more striking marks of substantial thrift, rapid prosperity and advanced civilization, than the beautiful valley of the Shenango.

Oregon.

The *Oregonian* contains the following correspondence from Canyon City: "The bed of Canyon Creek, the flats at the mouth of the creek, and the newly discovered prospects on the main John Day River, promise well to employ thousands of laborers for years to come; that is to say, of that class who can and will work for a compensation of from $3 to $5 a day. The best of Canyon Creek is but yet partially worked. The ground ranges in depth from twelve to twenty feet. In order to facilitate 'stripping,' expensive hoisting machinery has been erected. In all, about twenty derricks have been put up for this purpose, all of which hoist by water-power but one, which is driven by steam. Upon an average, these derricks have cost about $2,500, making a total of $50,000 for this particular species of apparatus, to say nothing of the vast expense entailed in pumping, draining and opening claims. The first prospects in the main John Day river were obtained about nine miles below the mouth of Canyon Creek, and continual encouragement is derived from the developments of each week's labor. For many miles above and below where these prospects were obtained, the John Day runs through prairie hills of very irregular formation, and the river bottom is of the average width of a quarter of a mile, all of which is good meadow or arable land. Prospects have also been obtained eighteen miles below Canyon Creek, on a bar where the bed-rock is above high water mark. While it is not to be expected that all the river bottom will pay, it is pretty well settled that a large portion of it is rich. The mines on the middle fork of John Day are confined to three creeks or gulches, which empty into that stream from the north. Going down stream, they are named, respectivcly, Elk Creek, Deep Creek and Buck Gulch. These creeks appear to be crossed by a range of gold-bearing rock from two to three miles up each of them, and from this rock has been dislodged the heaviest lumps of gold ever found in the John Day mines. On the south side of the main John Day, nine or ten miles below Canyon Creek, is the cinnabar lead, of which so much has been said. Some weeks since the Indians attacked two men who went up to examine the mine, and it was found necessary to send out six men with Henry rifles, and other shooting and cutting utensils, to take possession of the ground. During the last week this party has been engaged in sinking upon it, and the gratifying fact is established that the cinnabar lies in a true lead. The ore rapidly increases in richness as the miners go down on it, and the presumption is that it will yield as well as the new or old mines of Adria and Almaden. . . . . Speaking of the late discovery of cinnabar on John Day river, the *Mountaineer* says: "At the time of the discovery, a gentleman residing in Canyon City at once forwarded some pieces of the croppings to San Francisco for assay. The assayer's certificate attests that the ore yielded at the rate of $52.22 in gold, $3.50 in silver, and contains 14¼ per cent. of quicksilver. The cinnabar is held in a frame of sillicate. The proportion of quicksilver greatly increases as the lead is sunk upon; but whether this offsets the proportion of the more valuable metal is not determined. Most likely such is not the case, and whether the ore proves valuable to work for quicksilver or not, it is reasonably certain that it will prove very valuable for the precious metals which it contains. The facilities of abundant timber, exhaustless water power and a mild climate attend this valuable property, and its improvement and development must speedily take place."

Michigan.

One of our contemporaries says: "One-eighth of all the iron now made in the entire United States is dug from the mines of Marquette county, and yet, ten years ago, a piece of Lake Superior copper was a curiosity to most of our practical metallurgists. With the completion of the Sault St. Marie Canal, which was opened ten years ago this month, the projects for developing the iron ore trade assumed a definite shape. The few tons of mineral that had been carted around the portage of the mouth of the lake, had proven its value, and the first saw 1,445 tons sent below for smelting. The enlargement of the trade has been steady and rapid, as the following statement will show:

In 1855	1,445	tons were exported.
In 1856	11,594	" "
In 1857	26,184	" "
In 1858	31,135	" "
In 1859	67,679	" "
In 1860	116,948	" "
In 1861	45,500	" "
In 1862	115,620	" "
In 1863	185,275	" "
In 1864	235,125	" "

Making a total of 834,534 tons which, assuming the ore to yield an average of 60 per cent. (the standard desired by shippers is a yield of 66 2-3 per cent. in the furnace,) would give 500,750 tons of cast iron. It is but a few years since we first knew the value of mining enterprises, and we do not yet understand how to secure the real profit that economy and experience will derive from them. Work, work, work, is the American watchword, and by plodding away we may become as skilled miners as our English brethren, whose financial and commercial greatness is built from mines. . . . Correspondence of the *Tribune* from Houghton, Lake Superior, says: "People who have lived in the copper region of Lake Superior during the last fifteen years say times were never so dull as at present. I am sure this is destined to be a great region. Most of the range is entirely undeveloped, though as far as it has been explored it promises to be as rich as the ground in the immediate vicinity of the shipping points. A railroad is necessary to its development, as the country is so very rough that loads cannot be hauled by teams. The iron region of Marquette is looking well, and the mines are producing splendidly, and realizing a margin of between less than nothing and $2 45 the ton for

ores shipped. I visited the Foster mine on the Iron Cliff Company's estate. It is one of special interest, as it is, so far as it has been opened, *Hemitite ore.* The mine yields well, and shows a splendid face of ore. There are four other mines on this estate, I believe: the Tilden, Iron Mountain, Ogden and Palmer—the Foster alone of the five is being worked at present; the others will undoubtedly be in time, but their ores are a few per cent. too lean to be merchantable at present. The Washington mine (magnetic ore) is doing well this season. Also the mines at Negamee, and near Marquette—such as the Jackson, Cleveland, Lake Superior and others."

Minnesota.

E. Morton writes from Superior City, June 13th:—"Maj. Newson and party left here yesterday for Vermilion Lake, by the water route. They had not been gone above two hours before the news came from the Whiteface river, that a deaf and dumb man had found large placer, or gulch diggings, and that, by means of a common hand basin, he had washed from twenty to thirty-five dollars per day during the past week. He seemed very anxious to keep it quiet, and by so doing reap the golden harvest alone; but an intelligent half-breed happening to pass by, discovered him in the midst of his operations. He then told the half-breed, by signs, that, if he would stay there and work with him, he would divide the profits. But the Indian, it seemed, was afraid of the deaf and dumb miner, and fled, bringing an account of what he had seen. Immediately the news spread like wildfire, and in a few hours hundreds of the citizens of this place were *en route* for the Whiteface." Still later he writes: "Since writing the other letter, parties have arrived from the Whiteface, who say that it exceeds in richness anything they ever seen or heard tell of. They are here to procure dishes and tools to work with, and most of them start back to-night or to-morrow. Every man, woman, and child in the town has gold on the brain. Merchants are closing their stores, farmers leave their work, and business generally is at a stand. I have no time to write any more, as I start to-night for the 'diggings.'"

New Jersey.

The Keyport *Star* states that a great addition to the mineral resources of New Jersey has been made, by the discovery of the extensive beds of brown coal in the counties of Middlesex and Monmouth. This article of fuel is comparatively new in the United States, but it has been long known in many parts of Germany, where the beds vary from ten to fifty feet in thickness. The brown coal recently discovered in New-Jersey compares very favorably with the best German coal of this description, although what has been tried thus far is only the out-cropping of the beds. It is understood that nothing less than a six-foot seam of the brown coal will pay for working, as it will have to be sold at a low price to compete with the coal in ordinary use. Thus far the indications are very favorable with respect to the Middlesex and Monmouth beds. Openings have been made in various localities, and the coal in the upper stratum is found to be from two to five feet in thickness, while the lower stratum is from twelve to fifteen feet in thickness. The lower beds produce the best coal. As far as it has been tested, this brown coal burns with a free and steady flame, giving out a pleasant heat like English soft coal. It ignites easily, and burns to clear ashes, leaving no cinder. Should the mines prove as productive as they promise to be, New York will find almost at her very doors a good and cheap substitute for the costly coal imported from England.

Virginia.

Mr. James L. Petus writes: "I lately visited the Richmond coal fields; they are about fifteen miles from the city of Richmond. The coal is bituminous; it is brought to the city, or to tide-water, by the canal boats on the James River Canal, which communicates directly with the mine. The cost of landing one ton of 2,240 pounds—that is to say, mining and freight—will not exceed one dollar and seventy-five cents, landed at tide-water. The freight from tide-water on the James river to dock at New York is two dollars per ton. This makes the total cost of landing one ton of coal from the mine to New York three dollars and seventy-five cents. Now, I should think that if capital was turned to these coal fields, New York and Massachusetts manufacturers could obtain all the coal they wished for at most six dollars per ton, as well as supplying families at a low rate.

New Mexico

Several inquiries have been made at the JOURNAL OF MINING office relative to the contemplated expedition to the gold regions of New Mexico. We will state that letters to Col. R. C. Anderson, now at St. Louis, will doubtless elicit replies to all questions that can be asked. The expedition—in the words of the call—will start from Santa Fe, New Mexico, on or about the 20th of July of the present year, for the placer gold regions near the head-waters of the northern tributaries of Gila, in the southwestern part of the Territory. All the traditions of the country, and the observations of all who have passed through this region, cause the general belief that there is perhaps no gold field yet discovered richer in deposits of this precious metal. It is intended that there shall be enough miners and practiced mineralogists in the expedition to thoroughly prospect this region. All who intend to join the expedition should come armed, mounted, and with subsistence for at least ninety days.

Louisiana.

Much interest has been created by a recent discovery in the valley of the Mississippi, near New Orlerns, of an immense bed of pure rock salt, almost as transparent as crystal, which lies some thirty feet below the surface. Specimens of the salt have been received by the Smithsonian Institution. A most singular fact in connection with this valuable deposit has been the discovery of the remains of an elephant twenty feet below the surface of the superincumbent earth, beneath which have been found basket work formed of reeds. Photographic representations of this handiwork are in possession of the institute.

Kentucky.

The St. Louis papers speak of some fine specimens of lead taken out from the mines on Big Twin Creek, Owen county, Kentucky. These mines are worked by H. M. Bradley, Reynolds, Bradley & Brother, under the name and style of the Missouri Mining and Exploring Company. The company have smelting works in the vicinity of their mines.

New Hampshire.

According to a late report of Dr. Hayes, Assayer of Massachusetts, the gold mines of New Hampshire are found to yield, per ton, $867 in gold; the mixed quartz, talcose slate, gozzan, pyrites, &c., yield upon analysis, $310 42 per ton.

Canada.

From time to time, says a contemporary, attention is called to the rich mineral deposits which exist in various parts of Canada, and something is being done in a number of places to develop those resources; but many rich deposits lie almost wholly neglected. In some instances the difficulty is in the want of roads. The great lack, however, is lack of capital. Many of our mines, like many other sources of wealth which our country possesses, must lie idle because the capital cannot be had to develop them. Ours being a new country, capital has not accumulated here yet, and the little money which our rich people have must inevitably be devoted to those enterprises which, out of the many investments offering, seem to offer the best, quickest and most certain return. We must have patience. If our people continue industrious and prosperous, the drawback of which we speak must year by year become less. After a while we may hope to have money for 100 enterprises which are now neglected—not because they might prove unprofitable, but because the money is wanting. Probably the iron deposits in Marmora and other townships to the north of Belleville have attracted as much notice as any other in the country. Two towns, Belleville and Coburg, are striving to become outlets of the great trade in those ores which are expected to spring up when roads have been built to render the cost of transportation less than it is now. At Belleville it is proposed to build a railway running directly into the mineral region. At Coburg it is proposed to connect the east end of Rice Lake with the mines by means of a rail or tramway. This road would be eight miles in length, and the ore would have to be carried from the terminus of the road in barges to the point where the Cobourg and Peterboro Railway touches the south shore of Rice Lake. Thence it would be sent by rail to Cobourg, from which point it could be shipped either by land or water. The disadvantages of this plan is that the transhipments would cost something, and that the barges could not carry ore in winter. The advantages, on the other hand, are that it would cost less to build the eight miles of road which are wanting to complete the Cobourg route than to build the longer road to Belleville, and that the Cobourg people are at work and promise to have their route complete by July next– a feat beyond the power of the Belleville people. It is possible that ultimately both roads will be built and prove wise investments. Without either railway it is found impossible to mine and sell the ore at an advantage. In the recent issue of the Belleville *Intelligencer* we find the following upon that point: "A large number of workmen have been engaged for some time in getting out ore from these mines, and the indications are good for constant and remunerative employment. A Pittsburgh company sent an agent to procure 1,000 tons of the ore and forward it for experiments as to its real value. This amount was procured and sent to Trent by teams, and from thence by railway. Another order has been received for 100,000 tons of the ore, and laborers are now busily engaged in getting it ready for transportation. Really this begins to look like business, and we do not wonder that Belleville and Cobourg are each anxious to become the outlet to this mineral locality. It is stated that the supply is so abundant that it cannot be exhausted in a century."

Nicaragua.

Discoveries of new mines in Nicaragua are creating some excitement throughout Central America. The Panama *Star and Herald* says: "From Nicaragua we learn that the first batcy of immigrants sent out by the Central American Colonization Society (which has its headquarters in San Francisco and Cincinnati), had arrived at Leon and Chinandega, under the charge of Captain Douglas, and that the different members, chiefly Americans and Germans, had gone into farming and mining. Last year about twenty American families, principally from Missouri, immigrated to Nicaragua and took up their abode in the Department of Matagalpa; but most of them have recently gone to the Chontales district, by far the most fertile and finest of the whole republic, and in direct steam communication with the Atlantic, by way of the Lake of Granada and the river San Juan. It is in the Chontales district where the rich gold and silver mines now worked by the English companies are situated, and where fine pasture and forest lands abound. Libertad, until recently a small, dull village, is rapidly rising to the dignity of a large, bustling town—thanks to the mines, the foreigners, their intelligence and capital; it is close to the mines, and enjoys, like the whole of Chontales, a cool and healthy climate. Within the last few months more than one hundred gold mines have been "denounced" in this district, and when recently the *Official Gazette* of Nicaragua published a list of them, the excitement in the country, already great, increased to a wonderful extent. The price of mnes has gone up at an astonishing rate. Mines, sold a year ago for a hundred dollars, are now not to be had for thousands. The gold of Chontales and Nicaragua in general is very different from that of California and Australia. There are no nuggets; on the contrary, the gold is as fine as flour, and, in many instances, cannot be seen in the matrix, even with the assistance of a magnifying glass. But on putting a handful in a horn spoon and washing it, the presence of the precious metal becomes apparent."

British Columbia.

The Big Bend mine excitement still continues. . . . The *Oregonian* says: "Mr. W. Hugh Farrar has shown us a button of silver worth 85 cents, taken from half an ounce of rock from the Suswap company's ledge in North Cherry Creek, British Columbia, the principal owners in which are some of our best citizens."

From the Victoria *Colonist* of May 17th we learn that there was no news of importance from Williams' Creek. Snow is disappearing fast, and water commencing to flow again. Most of the claims expect to be at work again next week. The road from Vanwinkle to the Creek is impassible for animals. The diggings on Canon Creek are reported very shallow, pay dirt being found two feet below the surface.

Nova Scotia.

The Nova Scotia Coal Company have nearly completed their arrangements for the building of their railway to the navigable waters of the Middle river. We understand the most of the road has been located and the work of construction will be commenced forthwith. It will be about five miles in length.—*Pictou Standard.*

Cocos Island.

The little schooner Ida, Captain Libby, recently fitted out at San Francisco for an expedition to seek the fabulous treasure on the Cocos Islands, sailed on the 5th of May for Tumaco, with a number of miners for Barbacoas. After landing the gold-hunters, the Ida will proceed to the Cocos Islands, in pursuit of the long-hidden treasure supposed to be buried there by the pirates of olden times. This is about the fourteenth expedition that has visited these islands on a similar expedition during the past sixteen years.

New Zealand.

A mighty change seems to be dawning over the destiny of New Zealand. The sand on its sea-shore, the rivers flowing through the length and breadth of its land, and the mountain ranges from the north to the south of each island, all seem impregnated with gold to a greater or less degree. The Hokitika diggings, since they have been worked, a period of only a few months, have turned out about £700,000 worth of the precious metal. A correspondent from that locality writes as follows: "And as to the reality of the ground as a gold field, I think there cannot be much doubt, when, within one month, more than 45,000 ounces of gold were exported, and I doubt not the present month will be far in excess of this. A few days ago I happened to be out riding, and selected the beach north of the town on which to take exercise, and found the whole of the beach for miles was being occupied with diggers, who are mining just above high-water mark, and are washing out of the sea-sand sufficient gold to produce from £5 to £20 per week per man. In fact, nearly the whole coast from the Grey river down to Bruce Bay is a magnificent gold field; and inland, too, for miles, men are gradually extending the field. During the last fortnight there have been several rushes up to the foot of the snow-capped Southern Alps, where the diggers are finding good payable gold. The total value of New Zealand gold exported from the colony up to the 30th of June last was £7,646,809, and the number of ounces was 1,947,667. The principal localities from whence the gold has been obtained hitherto have been Otago and Christchurch provinces, but the whole of New Zealand is believed by geologists to be auriferous."

Russia.

Many will be surprised to learn that recent inquiries have shown the Russian coal resources to be greater even than those of the United States. In the Oural district coal has been found in various places, both in the east and west side of the mountain chain; its value being greatly enhanced by the fact that an abundance of iron is found in the vicinity. There is an immense basin in the district of which Moscow is the centre, which covers an area of 120,000 square miles, which is therefore nearly as large as the entire bituminous coal area of the United States. The coal region of the Don is more than half as large as all of our coal measures. Besides these sources, coal has lately been discovered in the Caucasus, Crimea, Simbirsk, the Kherson, and in Poland.—*London Review.*

Oil Summary.

Pennsylvania.

From the Venango and other petroleum fields we still hear good accounts. Since the repeal of the iniquitous tax on crude oil, it is very evident that matters are improving. There is more of the legitimate and less of the speculative spirit now, and we expect the oil interests hereafter to steadily grow.

California.

The Santa Cruz *Sentinel* says the petroleum company in that place is driving ahead in fine style. Four new retorters are now at the landing, and will shortly be delivered at the works. Each of the cast-iron monsters weigh 5,000 pounds. The company's team is in town about three times a week, loaded with some two hundred gallons. These works are about eight miles from Santa Cruz, and it is a great pity that the escaping gas cannot be conveyed to this place. There is enough constantly escaping to light the whole town.

Ohio.

The Morgan *Herald* says that oil was struck by the Muskingham Oil Company, on Spring Run, three miles from McConnellsville, at a depth of 1,200 feet, and four feet in the oil rock. Gravity of oil 30°. The company have been engaged fifteen months in boring this well. . . . . An oil well is being sunk near Mahoning, Trumbull County. . . . . In the Muskingham Valley oil matters are still at fever heat. The latest strikes are "Jenny Lind," at Rural Dale, and "Hazlett No. 2," of Blue Rock.

Kentucky.

The Danville *Gazette* learns that "the oil company boring on the lands of Mr. Bottom, in the west end of this county, near Perryville, 'played out' a few days ago," and they have left without paying their bills.

Indiana.

The Noble County *Journal* learns on good authority that the newly discovered oil region of Huntertown, Allen County, is no humbug. In some places the flow of oil from the spring is from four to five gallons per day.

GOLD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Acadia			Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Ada Elmore	200,000	$2,000,000	South Boise, Idaho	B. Lawrence. 157 B'way, N. Y.
Amber	300,000	300,000	Greene Co., Penn	Geo. W. Grove. 276 S. Third. Phil
Albion		300,000	Halifax, Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Alps	100,000	250,000	Illinois Central Dist., Col.	J. Stanton, Jr., 25 Nassau, N. Y.
Ascot	50,000	5,000,000	Sherbrooke, Canada E.	G. H. Morrison, 17 Nassau. N. Y.
Atlantic				Chas. Barett, 13 Doane, Boston.
Atlatic & Pacific	50,000	5,000,000	Humboldt T., Humboldt co.	J. N. Sewall, 8 Broad, N. Y.
American	100,000	5,000,000	Gregory Dist.	
American Flag	60,000	600,000	Nevada Dist., Col.	H. Foles, 71 B'way, N. Y.
Astor	200,000	1,000,000	On Comstock Lode	J. Chapman, 71 Broadway, N. Y.
Baltic			Colorado	New York.
Bates & Baxter			Colorado	New York.
Bay State	200,000			Lem'l Bangs, Boston
Benton	100,000	500,000	Colorado	F. W. Capen, 44 Ex. Pl. N. Y.
Black Hawk	50,000	5,000,000	Gilpin co., Col.	D. Littlejohn, St John, N. Y.
Beacon		500,000	Halifax co., Nova Scotia	J. B. Post, 20 Ex. Pl., N. Y.
Bobtail	100,000	1,000,000		J. Stanton, Jr., 25 Nassau, N. Y.
Briggs	10,000	1,000,000	Gilpin co., Col.	D. Littlejohn, St John, N. Y.
Burroughs	250,000	1,000,000	Yavapai County, Arizona	O. H. Conover, 219 Dock St., Phil
Burroughs	100,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Ballion	200,000	1,000,000	Bannock, Montana	69 Liberty, N. Y.
Bullion Consol.	300,000	300,000	Summit and Clear Creek., Col.	J. P. Whitney, 19 Lindall, Boston
Calvin	200,000	1,000,000	Clear Creek co., Col.	J. P. Whitney, 19 Lindall, Boston
Canadian				A. Call, 7 Phœnix E'l'g, Boston.
Chem. Gold&S. R				61 B'way
Ch. Un. Gold Co.	240,000	1,200,000		Jesse G. Pitts, 69 Liberty
Chebucto	100,000	500,000	12 miles from Halifax	J. E. M. Gilley, Boston.
Clarendon		500,000	8 miles from Halifax	H. Doane, 41 State, Boston.
Chase	5,000	500,000	Colorado	W. F. Lawton, 81 John, N. Y.
Central Gold M.	20,000	1,000,000	Central City, Col.	L. Bangs, 17 Nassau, N. Y.
Central Mining	200,000	1,000,000	Colorado	46 Exchange Pl., N. Y.
Chandlere	100,000	500,000	5,000 A Famine Riv., C. E.	Wm. B. Fowle, Boston.
Cobden	100,000	1,000,000	Idaho	New York.
Colonial				W. N. Fly, 7 Trav'r B'l'g, Boston
Colorado Boston			Colorado	R. C. M'Laughlin, 69 State, Bos'n.
Colorado N. Y.			Colorado	12 Pine, N. Y.
Coleman			Colorado	New York.
Columbia	50,000	3,000,000	Austin City, Nevada	10 Pine, N. Y.
Consuelo Gold				54 William.
Cousol Gregory	50,000	5,000,000	Gregory Dist., Col.	30 Pine, N. Y.
Cook & Kimball	1,000	150,000	Colorado	W. W. Baldwin 35 Wm., N. Y.
Copalinshee	250,000	5,000,000	Parke co., Col.	J. C. Stocker, 137 B'way, N. Y.
Corrisannee	100,000	1,000,000	Colorado	New York.
Commonwealth			Nevada	Philadelphia.
Corrydonn	100,000	2,500,000	Gilpin co., Col.	46 Exchange Pl., N. Y.
Continental	20,000	2,000,000	Gregory Dist., Col.	115 Liberty, N. Y.
Central Gold	200,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Dauphin & Colo.	200,000	1,000,000	Colorado	John S. McMullin, 423 Walnut, Pa.
Day & Bushnell	300,000	3,000,000	Colorado	20 Ex. Pl., N. Y.
De Lery		10,000,000	Chandlere Valley, Canada E.	J. M. Winchell, 72 Cedar, N. Y.
Denver	50,000	1,000,000	Gilpin & Clear Creek, Col.	J. Wadsworth, 61 Cedar, N. Y.
Devonshire				W. Stockbridge, 74 Fr'klin, Bos'n
Downieville	300,000	300,000	Colorado	J. C. Harriott, 70 Wall. N. Y.
Dorset			Chandiere River, C. E.	F. McInnes, 59 Wm., N. Y.
Eagle	100,000	1,000,000	Gold Dirt Dist., Col.	J. P. Davies, 81 John, N. Y.
East Bannack	100,000	200,000	Bannack City, Montana	J. Callender, 18 Ex. Pl., N. Y.
Eldorado	500,000	2,500,000	San A Dist., 9 miles of Austin	208 S. Fourth, Phila
Empire Mill & M				O. F. Griffin, San Francisco.
Enriquetta			Arizona	New York.
Esperanza		500,000	Star D., Humboldt co.	117 Broadway, N. Y.
Etna	50,000	500,000	Nevada Dist., Col.	C. W. Bryant, Boston.
Excelsior	30,000	300,000	Central City, Col.	J. Weatherbee Jr., 11 F. B'g, Bos.
Fairmount	20,000	200,000	Colorado	John P. Harker, 109 N. 6th, Phil.
Famine Falls	100,000	1,000,000		D. L. Dodge, 80 B'way, N. Y.
Garrisons	100,000	5,000,000	Colorado	C. G. Mease, 29 William, N. Y.
Gem	25,000	1,250,000		B. K. Gates, 191 B'way, N. Y.
Georgetown			Colorado	New York.
Gilbert River				C. F. Jackson, 18 Phe'x B'g, Bos'n.
Gilpin				C. W. Galloupe, 76 State, Boston.
Golconda	250,000	5,000,000	Sherbrooke, Canada E.	W. H. Adams, 19 Broad, N. Y.
Gold Field				C. B. Cowling, 39 Kilby, Boston.
Gold Rock	5,000	500,000	Central City, Colorado	R. M. Lockwood, 113 Wall, N. Y.
Gold Hill	50,000	500,000	Colorado	W. T. Eustis, Boston.
Gold Mountain	600,000	6,000,000	Clear Creek Co., Colorado	25 Nassau, New York.
Gold Min'g of Col	50,000	5,000,000	Colorado	F. Latham, 23 William, N. Y.
Golden Gate	60,000	600,000	Sum. Highl'd & Mill C. D., Mon	J. Morse, Jr., 117 B'way, N. Y.
Gunnel Central			Colorado	70 Broadway, N. Y.
Gunnel Gold	300,000	3,000,000	Colorado	F. F. Roelfson, 78 & 80 B'way, N.Y.
Gregory	20,000	1,000,000	Colorado	Thos. Wildes, 17 William, N. Y.
Granada	50,000	125,000	Colorado	J. Stanton, Jr., 25 Nassau, N. Y.
Great Western	60,000	600,000	Russel Dist., Col.	F. Kenneys, 70 Broadway, N. Y.
Gunnel Gold	100,000	1,000,000	Colorado	F. F. Roelfson, 78 B'way, N. Y.
Halifax				A. Case, 7 Hanover B'l'g, Boston.
Harmony				Thomas Barnes, 21 Park Row.
Her'd'ge Ranch	50,000	200,000	El Dorado, Cal.	
Hope	80,000	2,000,000	G'ld Dirt Dist., Gilp co., Col	J. P. Davies, 81 John, N. Y.
Holman	150,000	500,000	Clear Creek co., Col.	J. O'Neill, 23 Wm. N. Y.
Humboldt	100,000	500,000	Colorado	78 B'way.
Idaho Gold	100,000		Montana	5 Pine, N. Y.
Isaac's Harbor	100,000	500,000	Isaac's Harbor, Nova Scotia	W. F. Shirley, 137 B'way, N. Y.
Isle Royale				44 Ex. Pl.
Kansas Colorado	100,000	1,000,000	Colorado	J. G. Greenlees, 111 B'way, N. Y.
Kent				G. H. Wyman, 19 Phe'x B'l'g, Bos.
Kip & Buell	100,000	200,000	Colorado	J. C. Harriott, 70 Wall. N. Y.
Knickerbocker	100,000	1,000,000	Colorado	F. Avery, 78 B'way, N. Y.
La Crosse	100,000	$1,000,000	Nevada Dist., Colorado	H. Fales, 71 B'way, N. Y.
Liebig	200,000	$1,000,000	Colorado	
Lake Major	12,000	600,000	Nova Scotia	Fred. Franck, 113 Water, N. Y.
Mariposa Gold	100,000	10,000,000	Bear Valley, Cal.	G. W. Farlee, 34 Wall. N. Y.
Mammoth	50,000	500,000	Colorado	J. Jarrett, 41 Liberty, N. Y.
Manhattan	100,000	1,000,000	Colorado	W. R. Lothrop, 172 B'way, N. Y
Massachus tts	250,000	1,200,000	Gilpin co., Col.	W. D. Briggs. 11 Phe'x B'l'g, Bos.
Merchants	50,000	600,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N. Y.
Metropolitan				
Mountain Pride	100,000	1,000,000	B'r C'k, St. T'se., Idaho	29 Pine, N. Y.
Montague	50,000	500,000	near Halifax, Nova Scotia	C. B. Cowling, 39 Kilby, Boston.
Mount Alpine			Griffith Dist., Clear C'k, Col.	J. B. Randol, N. Y.
Mount Vernon	500,000	5,000,000	Mt. V. & Mam'th Dist., Nev.	25 Park Row, N. Y.
Mount Vista	50,000	500,000		J. Chapman, 25 Nassau, N. Y.
Montana	100,000	400,000	Nevada, Ills., Greg'y, Col.	A. L. Graeber, 54 Wm. N. Y.
Monte Cristo	100,000	2,000,000	White Pine District, Nev.	Thos. Dunlap, 413 Chestnut, Phil.
Montezuma	100,000	500,000	Colorado	F. B. Webster, Boston.
Montrose	100,000	1,000,000	Clear Creek co., Col.	C. A. W. Sibley, 80 B'way, N. Y.
Morning Star	5,000	5,000,000	Owyhee co., Idaho	E. M. Barnum, 137 B'way, N. Y.
Mexican Pacific	100,000	10,000,000	Mexico	J. Mackie, 88 Wall. N. Y.
Melones & San			Calaveras co	606 Mont, San Francisco.
National	300,000	3,000,000	on So. Boulder C'k, Col.	31 School, Boston.
Nevada Star				25 Pine, N. Y.
New England	50,000	150,000	Black Hawk, Col.	J. Weatherbee, Jr., Boston.
New Mexico			near Santa Fe	
New Gregory				W. A. Kent, 144 State, Boston
New York City	50,000	5,000,000	G'd Canon D'l't, Land. co. Nev	10 Pine, N. Y.
New York Dist.	50,000	500,000	Austin, N. Y. Dist., Nevada	71 B'way, N. Y.
New York of Col	100,000	1,000,000	Colorado	F. E. Rochson, 74 B'way, N. Y
N. Y. & Nevada	100,000	1,000,000	Nevada	J. J. Osborn, 30 Pine, N. Y.
N. Y. G. Min'g.	100,000	1,000,000	Colorado	F. E. Rochelson, 78 & 80 B'way.
N. Y. & Eldor'do	250,000	2,500,000	Nevada	G. H. Munroe, 106 B'way, N. Y.
N. Y. & Idaho			Idaho	180 Chatham, N. Y.
N. Y. & Santa Fe			Nevada	New York.
N.Y. & Owyhee		1,000,000	Owyhee co., Idaho	6 Pine, N. Y.
N. Y. & Oro Fino	10,000	1,000,000	Owyhee co., Idaho	137 Broadway, N. Y.
N. Y. & Reese R			Nevada	New York.
N. Y. & Renfew				2 Murray. N. Y.
N. Y. & Washoe			Nevada	New York.
North Clear C'k	100,000	1,000,000	Gilpin co., Col.	J. Francis, 80 B'way, N. Y.
Nova Scotia				Chas. Barrett, 13 Doane, Boston
N. Y. & Nova Sc	100,000	1,000,000	Tangier, Nova Scotia	Jos. E. Gay, 3 Hanover, N. Y.
National S Min'g		1,500,000	Owyhee co., Idaho	115 B'way, N. Y.
Occidental	5,000	500,000	Nevada & Ills. C. Dist., Col.	100 B'way, N. Y.
Oldham				Chas. Barrett, 13 Doane, Boston.
Ophir	62,500	625,000	on Comstock Lode, Nevada.	Moses A. Hopkock, 45 William.
Pacific	40,000	4,000,000		24 Pine, N. Y.
People's	100,000	5,000,000	Alpine & Sierra cos.	23 Nassau.
Peck				E. R. Sawyer, 144 State, Boston.
Perigo	60,000	3,000,000	Ind. Dist., Gilpin co., Col.	J. W. Stratton, 90 B'way, N. Y.
Pine Mountain	30,000	3,000,000	Pine Mountain Dist., Nev.	F. K. McCully, 157 B'way, N. Y.
Pioneer & Inskip			Buena Vista Dist., Nevada.	15 Nassau, N. Y.
Phila. & Color'do	200,000	1,000,000	Central City, Col.	E. W. Clark & Co., Phila.
Phelps & Gilm'r	200,000	1,000,000	Colorado	W. H Steudevant, 25 Nassau.
Pleasant Valley	125,000	1,250,000	Colorado	J. S. Lyon, 69 Wall. N. Y.
Pontiac	50,000	1,000,000	Hl Cen. M Dist., Col.	R. H. Rickard, 19 Nassau.
Prescott	100,000	1,000,000	Central Arizona	69 B'way, N. Y.
Quaker City			Ind't D't. G'd D't City, Col.	103 South Third. Phila.
Quartz Hill	40,000	100,000	Nevada Dist., Col.	J. A. Tyler, 29 Wall. N. Y.
Rancho C'k	10,200	1,200,000	Pine Wood Dist., Nevada	18 Broad. N. Y.
Realto		1,600,000	G'd Hill D., Storey co., Nev.	117 B'way. N. Y.
Reese River P'r'l	100,000	1,000,000	AmadorDist., Lander Co., Nev	Elijah Aliger, 67 Wall. N. Y.
Renfrew				W. Stockbridge, 74 F'klin. Bos'n.
Republic	15,000	1,500,000	Amador D., Lander co., Nev.	67 Exchange Pl., N. Y.
Rocky Mountain	50,000	500,000	Grey & Empire Dists., Col.	E. L. Bolles, 70 B'way, N. Y.
Reciprocity	100,000	1,000,000	Canada East	B. B. Grant, Jr. 71 B'way, N. Y
Scorpion			Virginia City, Nevada	617 Clay, San Francisco.
Sherbrooke	100,000	1,000,000	Sherbrooke, Canada East	F. Schunnacker, Cliff. N. Y.
Silas Wright	60,000	600,000	Amador D., Lander co., Nev.	18 Wall. N. Y.
Silver State	100,000	500,000	Humb't Starr. Pr. R. D Humb't co., Nevada	R. S. Miller, 49 William, N. Y.
Silver Wave	300,000	3,000,000	Resee riv., Lander co., Nev.	Emmet Blair, 243 B'way, N. Y.
Smith & P'rmlee	125,000	2,500,000	Colorado	G. A. Lathrop, 4 Broad. N. Y.
Smithfield	100,000	400,000	Gilpin Co., Col.	A. F. Baum 48 Broad st., N. Y.
Spanish		3,000,000	La Plata, Churchill co., Nev.	228 South Third. Phila.
So. Clear C'k			Colorado	Canastota, N. Y.
Starlight Ledge	50,000	500,000	P'ville, El Dorado co.	
Star of Color	200,000	2,000,000	Colorado	J. N. Powers, 22 Pine. N. Y.
Standard	50,000	500,000	Gregory Dist., Col.	T. A. Mitchell, 70 B'way, N. Y
Steptoe	20,000	2,000,000	G'd Can., Lander co., Nev.	10 Pine. N. Y.
Sterling City		1,200,000	Colorado	New York.
Stewart	100,000	500,000	Colorado	C. Durham, 31 Exchange. Boston
Suffolk				Carlos Cobb. 22 William. N. Y.
Southard				Wm. Wallace, 11 Doane, Boston.
Stallord				C. E. Jackson. 15 Central, Boston
Taschet	100,000	1,000,000	Colorado	F. J. Wright, 8 Wall. N. Y.
Texas	50,000	500,000	Black Hawk City, Colorado.	Wm. E. Parish, 155 B'way, N. Y
Trumbo			San Antonio, L. Cal.	San Francisco.
Union	240,000	12,000,000	Colorado	F. A. Potts. 110 B'way.
United States	75,000	1,500,000	Colorado	J. P. Stevens. N. Y.
University				31 Nassau, N. Y.
Virginia City	250,000	250,000	Nevada	J. B. William. 78 & 80 B'way.
Wauba Yuna	600,000	6,000,000	Arizona	35 William. N. Y.
Waddingham	48,000	1,200,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N. Y
Waverley				J. Leighton, 97 State, Boston
Windsor Gold M	10,000	100,000	Colorado	25 William. N. Y
Wilson & Cass			Colorado	New York

LEAD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Amenia	100,000	$ 500,000	Duchess co., N. Y.	G. Furman, 77 Cedar, N. Y.
Bucks County	40,000	200,000	Bucks co., Pa.	R. R. Sinclair, 53 Ex. Pl., N. Y.
Canada	50,000	250,000	Canada	Alb. Case, 7 Phe'x B'l'g, Boston.
Clute	110,000	550,000	Macomb T. St. Law. co., N. Y.	Bev'l'y S. Merrill, 42 Cedar, N.Y.
Continental	200,000	500,000	Martinsburg, N. Y.	J. Sickles, 57 Ex. Pl., N. Y.
Eastport	100,000	1,000,000	Eastport, Me.	R. Vose, 54 William. N. Y.
Erie	40,000	4,000,000	Orange co., N. Y.	Ogden Gaul. 25 Pine, N. Y.
Hampton	100,000	500,000	Hampshire co., Mass.	C. W. Bryant. Boston.
Jefferson				65 Wall. N. Y.
King's Hill	10,000	50,000		W. L. Haskin. 180 B'way, N. Y.
Lake Superior	200,000	1,000,000	{ Secs. 5 & 36 T., 49 & 50 R., 28 & 29 Marquette co, Mich.	C. L. Mather, N. Y.
Lancaster	50,000	250,000	Lancaster co., Pa.	J. R. Sibley. 35 Pine. N. Y.
Macomb	110,000	550,000	Macomb T. St. Law. co., N. Y.	C. E. Scofield. 42 Cedar, N. Y.
Maine	50,000	500,000	Eastport, Me.	A. L. Butler, 54 William. N. Y.
Mineral Point	100,000	500,000	St. Lawrence co., N. Y.	H. W. Warren, 63 City Ex., B'stn.
Morgan	160,000	500,000		W. Williams. 42 Cedar, N. Y.
Manhan				50 B'way, N. Y.
Mount Hope	80,000	200,000	Mt. Hope, Orange co. N. Y.	W. Williams, 24 Pine, N. Y.
New Hampshire	100,000	500,000	New Hampshire	W. A. Farrar, 71 B'way, N. Y.
N. Y. & Boston		1,000,000	Chester co., Pa.	S. M. Cockeie, 22 William, N. Y
Oswegatchie				24 Pine, N. Y.
Owens Lake	50,000	250,000		C. W. Bond. 78 Cedar. N. Y.
Phœnix	50,000	250,000	Columbia Co., N. Y.	G. W. Butler, 54 William, N. Y.
Placentia Bay	200,000	1,000,000	Newfoundland	J. Simpkins. 29 Wall. N. Y.
Ramsay	20,000	500,000	Township Ramsay, C. W.	C. W. Bryant. Boston.
Rochester	200,000	500,000		J. A. Ferguson. 8 Wall. N. Y.
Rossie				24 Pine. N. Y.
Rosa Clara	100,000	1,000,000		H. Lathrop, 25 Nassau. N. Y.
St. Clair	100,000	1,000,000		H. B. Hawkins, 25 Nassau. N. Y.
St. Joseph	100,000	1,000,000	St. Francis Co., Missouri.	Jas. R. Knapp. 6 Broad. N. Y.
Shawangunk	100,000	500,000	Mt. Hope, Orange, co. N. Y.	E. P. Ackerman. 48 Pine. N. Y.
Sussex	125,000	625,000	Sparta Town. Sus'x co., N. J.	F. H. Stow. 53 Cedar, N. Y.
Walkill			Orange co., N. Y.	W. A. Scott. 11 Wall. N. Y.
Warren			Warren, Grafton co., N. H.	J. S. Christie, 100 B'way, N Y
White Mountain			New Hampshire	111 B'way, N. Y.

SILVER.

COMPANY.	SHARES.	STOCKS.	LOCATION OF PROPERTY.	SEC'Y AND PLACE OF BUSINESS.
Amazon	25,000	$250,000	Nevada	W. L. Louther, 134 So. 3d, Phil.
Argentine	50,000	250,000	Argentine Dist., Colorado	D. L. Demmon, 134 State, Boston
Arizona	100,000	10,000,000	22 m W of Tubac, Arizona	J. B. Randol, 25 Nassau, N. Y
Astor	200,000	1,000,000	On Comstock Lode, Nev	J. Chapman, 71 Broadway, N. Y.
Atlantic & Pac.	50,000	1,000,000	Humboldt T. Hum't Co, Nev.	J. N. Sewall, 8 Broad st., N. Y.
Big Smoky	20,000	600,000	Smk'y Hill. Lander Co. Nev.	71 B'way.
Black Eagle	7,000	350,000	Carson, Owyhee co., Idaho	O. D. Gardner, 40 Maiden lane.
Bullion	200,000	1,000,000	Bannock, Montano	55 Liberty street.
Bush	50,000	500,000	Austin City, Nevada	176 Chambers st., N. Y.
Combination	5,000,000	50,000	Nevada	J. W. Stoute, Jr., 155 B'way, N.Y
Colorado Con			Cedar Hill Nevada	New York.
Columbia	30,000	3,000,000	Austin City, Nevada	J. E. Smith, 10 Pine street, N. Y.
Conn. & Nevada	120,000	1,250,000	Averill, Churchill Co. Nev	49 Liberty street, N. Y.
Commonwealth	200,000	2,000,000	Gold Hill, Nevada	78 B'way, N. Y.
Cosmos	10,000		Owyhee Co, Idaho	137 Broadway, N. Y.
Del Norte & S'br			Lower California	New York.
Durango	5,000	500,000		W. R. Garrison, 73 W'm st., N.Y.
East Bannock	100,000	200,000	Bannock City, Montano	J. Callender, 49 Ex. P., N. Y.
Empire G. & S.	100,000	10,000,000	Bodie Bluff, Mono	H. R. Gates, 191 Broad'y, N. Y.
Empire and Silver State	20,000	2,000,000	Reese River Dist., Nevada	57 B'way, New York.
Eldorado	500,000	2,500,000	San A 90 m s of Austin, Nev	208 South Fourth street, Phila.
Essex & Diadem	125,000	2,500,000	Sierra dis, Humboldt C. Nev.	A. R. Wetmore, 81 Vesey st, N.Y.
Franklin			Nevada	Philadelphia.
Gem	200,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Globe	100,000	500,000	Austin, Nevada	J. W. Brazier, 26 Pine, N. Y.
Good Hope	20,000	1,000,000	40 m S of Austin, Nevada	80 Broadway, N. Y.
Huron			Montano	New York.
Incas	300,000	300,000	Summit co., Colorado	J. P. Whitney, 19 Lindall, Bost.
Knickerb'r and Nevada	20,000	2,000,000	Union Dis. Nye Co, Nev	H. R. Shotwell, 70 Cedar, N. Y.
Lander Hill			Nevada	74 B'way, New York.
Lincoln		1,000,000	Owyhee Co, Idaho	80 Broadway, N. Y.
Law'r California	40,000	2,000,000	North Part of Lower Cal.	55 William street, N. Y.
Madison	30,000	3,000,000	Nevada	W. W. Perkins, 71 B'way, N. Y.
Macedon			Nevada	Philadelphia.
Manhattan			Nevada	57 B'way, New York.
Merchants	30,000	600,000	Alturas Co. Idaho	157 Broadway, N. Y.
Metropolitan	15,000	1,500,000	Austin City, Nevada	158 Broadway, N. Y.
Morning Star	5,000	5,000,000	Owyhee County, Idaho	137 Broadway, N. Y.
Mount Vernon	500,000	5,000,000	Mount Vernon & Mammoth District, Nevada	New York.
Mount Vista	50,000	500,000		J. Chapman, 71 Bway, New York.
National	15,000	1,500,000	Owyhee Co. Idaho	115 Broadway, N. Y.
Nevada	100,000	200,000	MountainWells. D. Ch. co. Nev	323 Walnut street, Phila.
Nevada	120,000	1,200,000	Nevada	E. L. Bolles, 74 B'way, N. Y.
New Y'k & Ione	20,000	2,000,000	Lime City, Nye Co., Nev	71 Broadway, N. Y.
New York	1,500	1,500,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
New York City	50,000	5,000,000	Gold Can Dist. Lander Co. N	10 Pine street, New York.
New Y'k Dis'ct.	50,000	5,000,000	80 m I'm Austin, N. Y. Dis Nevada	S. A. Hopkins, 71 Broadway, N Y
New Y'k & Nev	10,000	1,000,000	Nevada	L. J. Osborn, 30 Pine street, N. Y
N. Y. & Owyhee		1,000,000	Owyhee Co. Idaho	6 Pine street, New York.
N.Y. & Ore Fine	10,000	1,000,000	....do.....do.....	157 Broadway, New York.
N. Y. and Silver Peak	20,000	2,000,000	Nye County, Nevada	S. C. Root, 74 Broadway, N. Y.
N Y. & Santa Fe			Nevada	New York.
N. Y. & Washoe			Nevada	New York.
North Am. M'g			Nevada	Philadelphia.
Ocean Transit		1,500,000	Lower California, Mexico	24 Pine, N. Y.
Ophir			On Comstock Lode, Nev	26 Pine, N. Y.
Pah Ranagat Co.	50,000	5,000,000	Nevada	8 Pine street, New York.
People's	100,000	500,000	Alpine & Sierra Counties	18 East 26th street, New York.
Phœnix	200,000	2,000,000		F. H. Perkins, New York.
Picacho	50,000	2,000,000	Arizona	F. K. McCulley, 100 Bd'wy, N. Y.
Pine Mount'n	50,000	3,000,000	Pine Mount'n Dist. Nev	15 Nassau street, New York.
Pioneer & Inskip			Buena Vista Dis., Austin, Nev	F. H. Perkins, New York.
Prescott	50,000	2,500,000	Arizona	Wm. Lemmon, 17 Broad, N. Y.
Presidential	125,000	2,500,000	Austin, Nevada	67 Ex. Place, New York.
Republic	15,000	1,500,000	Amador D Lander Co. Nev.	A. L. Kite, 142 South 4th, Phila.
Revenue Ext'n	100,000	500,000	Lander County, Nevada	San Francisco.
Rosario & Carmo	5,244	1,480,000	Sinaloa, Mexico	7 Lamson, 21 Nassau st., N. Y.
San Antonio	60,000	3,000,000	Arizona	L. G. Wilkin, 119 B'way, N. Y.
Sempole	7,000	1,500,000	Unionpy., Humboldt Co., Nev	18 Wall street, New York.
Sierra Wright	60,000	600,000	Amador, D Lander Co. Nev.	E. C. Hitchcock, 62 B'dway, N.Y.
Silver Hill	40,000	1,000,000	Nevada	W. B. Rogers, 117 B'way, N. Y.
Silver Series		1,000,000	Lander Co., Nevada	A. M. Palmer, 19 Broad st., N. Y
South Boise, T. C.	200,000	2,000,000	Alturas Co., Idaho	155 B'way.
Star Hill	20,000	1,000,000	Nevada	Canastota, New York.
St'h Cl'r Crk			Colorado	S. S. Kellogg, 22 Pine, New York,
Stephenson	500,000	1,000,000	18 m E of Ft. Fillmore	10 Pine, New York.
Steptoe	20,000	2,000,000	Gold Can. Lander Co. Nev.	New York.
Sterling City		1,200,000		H. S. M'Collum, 78 B'way, N. Y
Tarshish	12,000	1,200,000	Toryabee Range, Un. D., Nev	L. Bangs, 17 Nassau, N. Y.
Tempest	200,000	1,000,000		San Francisco.
Trumbo			San Antonio, Lo'wr Cal	J. M. Brown, 157 B'wy, N. Y.
Toiyabee	50,000	5,000,000	Pine W'd, Mu'tn Dis. Nev.	40 Park Row.
Union & El D'o.	100,000	1,000,000	Mogul Silver Mu'tn	107 Broadway.
Upper Missouri		100,000	Montana	L. G. Bingham, 80 B'way, N. Y.
Velder	21,000	2,100,000	Murder Dist., Nevada	35 William street, New York.
Wanaba Yuma	600,000	6,000,000	Arizona	G. M. Eldridge, 144 S. 4th, Phil.
War Eagle	50,000	200,000	Owyhee Co. Idaho	S. R. Hutchinson, 80 B'way, N.Y.
Washington	22,500	2,250,000	Austin, Nevada	111 Broadway, New York.
White Mountain			New Hampshire	

COPPER.

COMPANY.	SHARES.	CAPITAL.	SITUATION OF PROPERTY.	SEC'Y., AND PLACE OF BUSINESS.
Adventure,	20,000		Parts of Sections 35, 36, T. 51, N Range 28 W.	W. H. Smith, 51 Ex. Pl. N. Y.
Etna,	20,000		1226 A in Secs. 6, 7, 18, T. 58, R 28, W Keweenaw co. Mich.	N. B. A. Hoopes, 324 Walnut St., Phil.
Alb'ny & Bost'n.	20,000		Secs. 7, 8, 9, 10, 11, T. 55, R. 33	Fred. Beck, 43 City Ex., Boston.
Anita,	20,000		Del Norte co., California,	8 Wall St., N. Y.
Algonah,	20,000		W½ S, 30, T. 51, R. 37,	L. W. Clark, Boston.
Allouez,	20,000		Town 57, R. 32, Sec. 31,	Horatio Bigelow, Boston.
Amy gd'yd'l.,	20,000		E½ Secs. 16, 21, T. 58, R. 20, NW¼ Sec. 5, T. 57, R. 31, 160 A.	F. H. Womrath, 324 Walnut St., Philadelphia.
Arcadian,	20,000		NW¼ Sec. 20, T. 57, R. 33, 160 A.	C. P. Dixon, 48 Pine St. N. Y.
Astor,	20,000		NW¼ Sec. 5, T. 57, R. 31 A. 160 A.,	A. W. Boardman, 35 Court St., Boston
Atlas,	20,000		NE¼ of E½ & NW¼ of NW¼ Sec. 31, T. 57, R. 31,	L. W. Clark, Boston.
Aztec,	20,000		W½ Sec. 31, T. 51, N. of R. 37,	L. W. Clark, Boston.
Bay State,	20,000		SW¼ Sec. 29, T. 58, R. 31,	L. W. Clark, Boston.
Beaver,	20,000		NE¼ Sec. 32, T. 58, R. 31,	A. W. Boardman, Boston.
Bohemian,	20,000		E½ Sec. 31, NW¼ Sec. 32, T. 51, R. 37, W,	R. H. Rickard, 21 Nassau St., N.Y. H. W. Warren, 60 City Ex., B'st'n.
Boston,	20,000			H. P. Mount, 3 Hanover St., N. Y.
Canada,	100,000		Brome co., Canada East,	
Carp Lake, M.,	20,000		T. 51, N. R. 43, W. S½ of N½ of N. Sec. 14, and E½ Sec. 23, and NE¼ Sec. 23, 440 A.	W. H. Abel, 70 Wall St., N. Y.
Cascade, M.	20,000		SW¼ Sec. 9, T. 49, N. R. 39, W, in Ontonagon co., Mich.,	G. F. Riley, 35 Wall St., N. Y.
Copper Creek,	1,000	$100,000	Missouri,	H. M. Thompson, Missouri, Mo.
Copper Falls,	20,000		Sec. 14, T. 58, N. R. 31, W. Keewenah Point,	97 State, Boston.
Copper Harbor,	20,000		S½ Sec. 10, T. 58, R. 28, 320 A, Keewenah co.,	Fred. Beck, 43 City Ex., Boston.
Copper Creek,	20,000	500,000	Douglas co., Wisconsin,	T. B. Lawson, 71 Broadway, N. Y
Central,	20,000	500,000	E½ Sec. 25, T. 58, N. R. 31, W,	J. Stanton, Jr., 25 Nassau, N. Y.
Cornwall,			Strafford, Orange co., Vt.,	D. H. Whitney, 17 State St., B'n.
Continental,	200,000	500,000	Martinsburg, New York,	J. Sickles, 50 Ex. Pl., N. Y.
Coriath,	20,000	500,000	Corinth, Orange co., Vermont,	W. A. Cleveland, 191 B'way, N.Y
Copper Hill,			Wisconsin,	Boston.
Dacotah,	20,000		Sec. 35, T. 55, R. 34, Portage Lake,	J. M. Cooper, Milk St., Boston.
Delaware,	20,000	500,000		S. M. May, 326 Walnut St., B'st'n.
Derby,			Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y
Dorchester,	20,000		800 A.,	51 and 52 City Ex., Boston.
Douglas,	20,000		E½ Sec. 30, T. 55, R. 3,	S. J. Edwards, William St., N. Y
Dudley,				H. Bigelow 43, City Ex., Boston.
Eagle River,	20,000		T. 58, R. 31, Secs. 28, 29, 33, 34,	A. Lamson, 70 State St., Boston.
Ely,	100,000	500,000	325 A., Richmond, Canada East,	Ernest Sacchi, 82 B'way, N. Y.
Empire,	20,000		1708 A., Secs. 1, 2, 11, 12, T. 58, N. K. 28, W. K'w'n co., Min.,	J. S. McMullin, 423 Walnut, Phil
Eureka,	20,000		W½ Sec. 2, T. 49, N. R. 41, W. Ontonagon co.,	H. Shirley, 137 B'way, N. Y.
Evergreen Bluff,	20,000		NE¼ Sec. 6, T. 50, R. 38,	F. W. Capen, 44 Ex. Pl., N. Y.
Flint Steel R.,	20,000		Sec. 11, 12, T. 50, N. R. 39, W.	F. K. McCully, 157 B'way, N. Y.
Forest City,	20,000		320 A. NE¼ Sec. 36, and SE¼ Sec. 25, T. 51, R. 43,	J. F. Paul, 19 Phœnix Building, Boston.
Franklin,	20,000		¼ Sec. 24, T. 55, N. R. 31 W.,	C. Emery, 26 Kilby St., Boston.
Franconia,	60,000	300,000	New Hampshire,	J. Hanna, 162 Fulton St., N. Y.
French Creek,	100,000		Chester co., Pennsylvania,	R. Roberts, 19 Nassau St., N. Y
Garden City,	20,000		SW¼ Sec. 60, N. W. Sec. 59, T. 58, N. R. 31 W,	R. H. Howe, Chicago.
Girard,	20,000		600 A. Secs. 15, T. 58, N. R. 28, W. Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Gr'd Portage,	20,000		SW¼ Sec. 36, R. 34, W.,	A. S. Kellogg, 22 Pine St., N. Y.
Great Western,	20,000		SE¼ Sec. 30, & SW¼ Sec. 29, T. 21, K. 320 A., Ontonagon	J. M. Cooper, 24 City Ex., B'st'n
Hamilton,	20,000		SE¼ Sec. 35, S½ Sec. 36, T. 50, R. 41, SW¼ Sec. 21, R. 20, 14¼ A.,	J. B. Townsend, 44 Exchange, N. Y.
Hancock,	20,000		SW¼ Sec. 26, Tract of Sec. 25, T. 5, R. 34, W.,	Fred. Beck, 43 City Ex., Boston.
Hanover,	20,000			do. do. do. do.
Hartford,	20,000	500,000	320 A. E½ & SE¼ Sec. 32, SW¼ & W½ Sec. 33, T. 50, R. 40, W,	T. M. Tyng, 61 Cedar St., Boston,
Henwood,			Michigan,	57 Broadway, N. Y.
Hope,	20,000	50,000	240 acres in T 57, R 32, Kw co.	19 Nassau St., New York.
Humboldt,	20,000		Sec. 21, T. 58, R. 31, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Hudson,	20,000		Ontonagon co.,	P. C. Blancan, 35 Wall St., N. Y.
Huron,	20,000		Sec. 2, T. 54, R. 34, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Isle Royale,	20,000		NW¼ Sec. 1, T. 54, R. 34, W,	F. W. Chapen, 33 Ex. Pl. Boston.
Keweenaw,	20,000	500,000	Michigan,	F. W. Chapen, 44 Ex. Pl., Boston.
Knowlton,	20,000		SE¼ Sec. 1, W¼ of SW¼ Sec. 1, and other lands,	44 Ex. Pl., N. Y.
Lafayette,	20,000		Secs. 25, 30, 36, T. T. 51, N. R. 43, and 44, W, Ontonagon,	P. C. Blancan, 35 Wall St., N. Y.
Lyster,	200,000	$400,000	Township Nelson, Canada East,	H. W. Nelson, 24 City Ex., B'st'n
Lower California	40,000	2,000,000	N. part of Lower California,	55 William St., N. Y.
Madison,	20,000		Part Sec. 18, 19 entire, 30, 31,	Fred. Beck, 43 City Ex., B'st'n.
Merryweather,	20,000		Secs. 9, 19, T. 48, N. R. 4, W.,	J. T. Waters, New York.
Mandan,	20,000		680 A. Secs. 8, 17, 19, 30, T. 58, N. R. 29, W., Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Manhattan,	20,000		W½ Sec. 11, NW¼ Sec. 14, T. T. 58, N. R. 32, W, 360 A.	J. W. Davies, 21 Nassau St., N Y.
Mendotta,	100,000	500,000		M Taylor, 30 Wall St., N. Y.
Mass. M. Co.,	24,000		SW¼ Sec. 7, T. 50, N.R. 38, W.	J. M. Cooper, Pittsburgh.
Mesnard,	20,000		NE¼ Sec. 24, T. 55, R. 34, Calaveras co.,	L. Burr, 12 Phœnix B'gs, Boston.
Melones & Stan.,				606 Mont St., San Francisco
Minnesota,	20,000		Sec. 15, T. 50, N. R. 39, W,	S. M. Pond, 12 Pine St., N. Y.
Maryland,			Maryland,	Baltimore.
Merrimac,	20,000		NW¼ Sec. 34, T. 51, R. 38, W. Ontonagon,	J. M. Mills, 284 Pearl St., N. Y.
National,	20,000		Sec. 16 T. 50, R. 39, W. 1,988 A	J. M. Cooper, Pittsburgh.
Native,	20,000		Keweenaw Point, Michigan,	
Nashua,	50,000	100,000	320 A. N. Ontonagon,	W. F. Hardy, 27 City Ex., B'st'n.
Nebraska,	20,000		NE¼ Sec. 12, T. 50, and other lands,	S. W. J. Webb, 54 Wall St., N. Y.
Nequakett,	20,000		Sec. 26 T. 51 R. 43,	G. S. Frost, Detroit.
New York,	20,000		240 A. S½ Sec. 10, E½ NE¼ Sec. 15,	H. W. Nelson, 24 City Ex., B'st'n.
New Burra,			Baltimore,	R. Roberts, 19 Nassau St., N. Y.
New Jersey Con.	100,000	1,000,000	New Jersey	W. Bowes, 68 Wall St., N. Y.
N. Y. & Passaic,	100,000		Harrison, Bergen c.,	T. H. Belt, Jr. 23 William St. N.Y.
New Devon,				T. H. Belt, Jo. do. do.
North Western,	20,000		W½ Secs. 24, 25, 26, E½ Secs. 26, 35, T. 58, N.R. 31,	17 William St., N. Y. J. M. Cooper, Boston and Detroit.
Norwich,	20,000	500,000	Secs. 11, 12, T. 49, N.R. 39, W. and other lands, 1,300 A.,	P. C. Blancan, 35 Wall St., N. Y.
Ogema,	20,000	500,000	NW¼ Sec. 6, T. 50, N.R. 33, W	G. E. Leilingwell, 7 Pine, N. Y.
Ontonagon,	20,000		631 A. Secs. 20, 21, 28, T. 50, N. R. 39, W. Rockland,	G. Hart, 11 Pine Street, N. Y.
Ont'n'g'n, Miss.	20,000		Ontonagon,	William D. Williams, Michigan.
Ohioville,	100,000	500,000	Ohioville, Orange co., N. Y.	C. Windsor, 69 Wall St., N. Y.
Penn. Manuf'g.,	20,000	1,000,000	4,520 A. Secs 13, 14, 15, 24, ½ Secs. 10, 11, 12, 23, 25, T. 58, N. R. 30, W.	S. M. May, 326 Walnut St., Phil.
Pewabic,	20,000		W½ Sec. 25, T. 55, N.R. 34, W.	C. Emery, 39 State, Boston.
Pitts. & Boston,	20,000		Ts. 58, 57, N. R. 31, 32, W. 12,405 A.	H. A. Johnston, Pittsburgh.
Pontiac,	20,000		SE¼ Sec. 13, T. 55, N. R. 34, W.	C. Emery, Kilbey St., Boston.
Portage Lake,	20,000		Houghton co. Michigan,	22 William St., N. Y.
Prescott,	100,000	1,000,000	Central Arizona,	69 Broadway, N. Y.
Providence,	20,000	500,000	240 A. in Keweenah co., NW¼ Sec. 10, W½ NW¼ Sec. 10, T. 57, R. 32, W.	J. W. Davis, 21 Nassau St., N. Y.
Phila. & Boston,	20,000		640 A. Sec. 14, T. 58, N. R. 28, W. Keweenaw co., Mich.	J. S. McMullin, 423 Walnut St., Boston.
Quincy,	20,000		Sec. 26, T. 54, N. R. 34, W.	W. H. Smith, 51 Ex. Pl., N. Y.
Republic,	8,000	200,000		H. Baldwin, 70 Wall St., N. Y.
Reliance,	20,000		Secs. 21, 22, 27, T. 58, N. R. 28 W. 1,785 A.	H. K. Thomas, 11 Wall St., N. Y.
Rochester,	200,000	500,000		J. A. Ferguson, 8 Wall St., N. Y.
Ridge,	10,000		Sec. 15, T. 51, R. 38, W.	51 Exchange Place, N. Y.
Rockland,	20,000		Sec. 11, T. 50, R. 39,	S. J. W. Barry, 71 B'way, N.Y.
Resolute,	20,000		1,140 A. Secs. 7, 18, 19, T. 58, N. R. 29, W. Keweenaw co., Mich,	
St. Mary,	20,000			F. Beck, 43 City Ex., Boston.
St. Margaret,	200,000	1,000,000	Canada,	E. B. Sutton, 43 Pine, N. Y.
Sharon,	20,000		Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Sheldon & Col.,	20,000		SE¼ Sec. 36, T. 55, R. 34 W.	S. J. Edwards, 22 Wm. St., N. Y.
South Side,			SE¼ Sec. 34, T. 55, R. 34, W.	H. W. Nelson, Boston.
Societe Fran'se,	10,000		T. 58, 59, N. R. 28, 30 W,	Copper Harbor
Suffolk,	20,000			Carlos Cobb, 22 William St., N. Y
Superior,	20,000		W½ Sec. 14, T. 50, N.R. 39, W.	S. J. W. Barry, 12 Pine St., N. Y
Toltec Consol.,	20,000		Secs. 25, 26, R. 59, R. 36,	H. W. Nelson, Boston.
Union,	20,000	500,000		A. S. Kellogg, 22 Pine St., N. Y
Ural,			Wisconsin,	17 William St., N. Y.
Vulcan,	20,000		1,120 A. Secs. 7, 17, 18, T. 58, N.R. 27, W. Keweenaw co.,	F. K. Womrath, 324 Walnut, Phil.
Victoria,	20,000		Secs. 29, 29, 30, 34, 24, T. 59, R. 30, and other lands,	L. W. Clarke, Boston.
W. Minnesota,	20,000		Sec. 17, 18, 19, T. 50, N. R. 39, W.	C. T. Howard, Boston.
Wickopee,	100,000	500,000	Massachusetts,	G. A. Sneden, 12 PineSt., N. Y
Vermont,	100,000	500,000	W. Fairlee, Orange co., Vt.,	191 B'way, N. Y.
Waula Yuma,	600,000	6,000,000	Arizona,	35 William St., N. Y.

F, means section; T, township; R, range

AMERICAN
Journal of Mining.
[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR.

By publishing contributions, the JOURNAL OF MINING *does not necessarily endorse the positions assumed by contributors.*

OFFICE, 37 PARK ROW, NEW YORK.

Published Every Saturday Noon.

TERMS:

SUBSCRIPTION.		ADVERTISING.	
Per annum, one copy -	$4 00	One line [Nonp.] 1 inser'n.	$0 30
Six months, one copy -	2 25	One Square, 10 lines, one do	2 00
Three months, one copy -	1 25	One Square, do. four do.	5 00
Single copy - -	10	One Square, do. one year,	40 00

Canadian subscribers 25 cents extra for postage.

☞ Specimen copies sent free.

☞ Liberal reductions to permanent advertisers.

DESIGNING, WOOD ENGRAVING,
LITHOGRAPHING and JOB PRINTING
Executed in elegant style, on reasonable terms.

Address **WESTERN & COMPANY, Proprietors,**
No. 37 Park Row, and No. 145 Nassau Street, New York City.

AGENTS,
AUTHORIZED TO RECEIVE SUBSCRIPTIONS AND ADVERTISEMENTS.

☞ *No persons have authority to receive money and receipt for the same on Western & Company's account except those mentioned below.*

COLORADO—GEO. TRITCH, Denver City.
" W. S. STANLEY, JR., P. M. Mill City, Clear Creek Co.
" R. G. KELLETT, Central City.
" R. C. MILES, P. M., Golden City, Jefferson county.
CALIFORNIA.—W. E. LOOMIS, San Francisco.
MEXICO.—B. C. BARKSDALE & Co., No. 13 Primera Calle de San Francisco, City of Mexico.

☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," to ensure safe carriage.

NEW YORK, SATURDAY, JULY 7.

Contents of this Number.

EDITORIALS—Product of the Precious Metals—Nitro-Glycerine Triumphant—An Old Principle Newly Applied—Steel Superseded by Iron, etc., etc.
ORIGINAL PAPERS.—SALT, No. SEVEN, by FRANCES E. ENGELHARDT, Ph. Dr., Professor of Chemistry in St. Francis Xavier's College—LEAD FIELDS OF THE UPPER MISSISSIPPI. No. FOUR, by J. VANCLEVE PHILLIPS.
SCIENTIFIC MEETINGS.
ANDREWS' PORTABLE STEAM ENGINE, described and illustrated.
CORRESPONDENCE—Manufacturers Depending on Mining—Coal, Introduction.
MISCELLANEOUS—Diamonds in the Southern States—Condensed Facts as to Sodium Amalgam—Borax—Iron Filings, Magnetic—New Route to Idaho—A Stream of Malachite.
SPECIAL SCIENTIFIC BREVITIES.
MINERAL AND OTHER OIL-PITS.
ALL SORTS.
MINING COMPANY STATEMENTS—MEETINGS—DIVIDENDS.
MINING SUMMARY—Latest news from California, Colorado, Nevada, Montana, Pennsylvania, Michigan, Minnesota, Virginia, New Jersey, New Mexico, Louisiana, Kentucky, New Hampshire, Canada, Nicaragua, British Columbia, Nova Scotia, Cocos Island, New Zealand, Russia.
OIL SUMMARY—Latest news from Pennsylvania, California, Kentucky, Ohio, Indiana.
PATENT CLAIMS—The latest allowed to Inventors of Mining and Milling Machinery, etc.,
MINING DIRECTORY—Gold, Copper, Lead and Silver Mining Companies—Names—No. of Shares—Capital Stock—Situation of Mine—Name of Secretary and Place of Business.
MARKET REVIEW.—Finances, Stocks, Metals, Petroleum, etc.
NEW YORK AND BOSTON DAILY QUOTATIONS OF MINING AND OIL STOCKS.
NEVADA STOCKS.—Latest advices by Mail and Telegraph.
NEW YORK METAL MARKET.
COPPER SALE AT SWANSEA, ENGLAND
LONDON METAL MARKET.
CHEMICALS USED IN THE VOLUMETRIC ASSAY—Prices, etc.
ASSAYING IMPLEMENTS.—Prices, etc.

PRODUCT OF THE PRECIOUS METALS.

In our last issue appeared a paragraph from a contemporary, in which the following estimate of the yield of the precious metals for the year 1866 was made: United States, $106,000,000, Australia, $20,000,000, Russia, $15,000,000 (silver), and from all other sources $5,000,000—making a total yield of $161,000,000, of which the United States is represented as producing two-thirds. The estimate, in our judgment, is far from correct—both as to the product of this country, which we think is placed too high, and that of the balance of the world, which is figured too low. That for the United States is thus arranged:

California	$25,000,000	Nevada	$16,000,000
Montana	18,000,000	Oregon	8,000,000
Idaho	17,000,000	Other sources	5,000,000
Colorado	17,000,000		
Total			$106,000,000

Our facilities for estimating such matters are probably at least equal to those of any other journal in the United States, and our estimate for 1866 would run thus:

California	$20,000,000	Oregon	$8,000,000
Montana	16,000,000	Colorado	9,000,000
Nevada	15,000,000	Other sources	4,000,000
Idaho	10,000,000		
Total			$82,000,000

Even this we think would be over rather than under the mark, and would make the United States appear to be the producer of over half the precious metals of the world, which we should be very glad to, but cannot, confirm. Whitney considers that Peru exceeds all others in the vastness of its silver deposits. A single mine known as the Pasco yielded in 1851 over $2,000,000. In Bolivia is the Great Potosi which, since 1545, the period of its discovery, has supplied the world with over $1,000,000,000, and which for eleven years during that time gave an annual average yield of $11,000,000 in silver. This has now fallen to $1,000,000 per annum. Yet, according to Lamborn, "the mines of Peru and Bolivia, notwithstanding their depressed condition during late years, yielded, from the period of their discovery to the year 1845, a quantity of silver equal to 155,839,180 lbs. troy, or a money value of not less than £506,220,000"—say $2,530,000,000, which would give an average during three hundred years of over $8,000,000. In Chili, between 1845 and 1853, the same authority states that not less than 1,750,000 lbs. troy of silver were raised. This would be about $3,000,000 per annum. For the other South American Republics allow $2,000,000 per annum in silver, and say $3,000,000 in gold, and we have a yearly yield in South America of at least $16,000,000 of the precious metals. But for constant political dissensions this amount would probably be quadrupled. The yield of the Central American gold mines at Barbacoas, New Grenada, and in Nicaragua, and that of the silver mines of Nicaragua, Costa Rica, Honduras and adjoining republics, will probably, during the present year, reach $8,000,000. As to Mexico it is very hard to estimate. Humboldt gives the total amount of silver raised from the time of the Conquest (1521) to 1803 as $1,767,952,000, and adding one-seventh for unregistered silver, a grand total of $2,027,952,000. Ward gives the total coinage from 1733 to 1826, as represented by government returns, at $1,433,658,611. From 1822 (the year of Independence) to 1856, the total coinage was $478,392,014. In 1856 it was $19,204,804; but, owing to the extensive smuggling carried on, there is reason to apprehend that the true silver yield for that year was nearer $40,000,000, while the gold yield was over $1,000,000. Lempriere, in his "Notes on Mexico, 1861 and '62," states that the annual shipments of silver from Mexico amount to $23,000,000. But he, like many another, makes no allowance for smuggling. During a residence of over twelve months in that country, we became aware of the immense smuggling trade carried on in silver, owing to the immense percentage lost by sending the bullion to the mint (as much as 20 and 30 per cent. sometimes), and the small (2 to 5) percentage paid to the person smuggling, and 1 per cent. paid to the captains of British frigates on the Mexican coasts, whose chief business it is to send boats ashore to bring such specie aboard for transmission to England. That, in fact, is the principal reason the British Government have for sending their frigates into Mexican waters. In 1861 and '62, when Lempriere wrote, the actual produce sent to the mint or shipped, plus the amount smuggled, was $45,000,000. But among the immediate consequences of the French invasion has been the stoppage, to a great extent, of work in the mines. However, we believe that the wonderful deposits in the States of Zacatecas and Guanaxuato continue to be worked with vigor and success; so also with some other rich portions of Mexico. On the whole, then, it is very safe to assume that Mexico still manages to coin, ship and smuggle as much as $20,000,000 per annum. British North America probably yields in gold about $10,000,000 per annum. So that the total annual yield at the present time of the entire American Continent is about $136,000,000, of which the United States produces $82,000,000. Australia's annual product of $20,000,000 should be $25,000,000. But gross injustice has been done to Europe in the estimate alluded to, and in many other similar paragraphs that are now floating about. In the year 1850 Europe produced nearly $5,000,000 in silver alone. But in the sixteen years past the increase has been large. This year Russia, with her Uralian gold mines, will doubtless raise $15,000,000 of precious metals; Great Britain $1,000,000 in silver; and Spain, Prussia, Saxony, Bohemia, the Hartz and other parts of Europe about $7,000,000 more, making a total annual yield of precious metals in Europe $23,000,000. The annual yield then, in the civilized world is about as follows:

North and South America	$136,000,000
Australia	25,000,000
Europe	23,000,000
Grand total	$184,000,000

It will be seen, then, that while we cannot truthfully say that our country is likely to produce two-thirds of the precious metals extracted from the earth during the current year, *yet we may fairly claim two-thirds yield of the entire continent, and nearly half that of the world.*

NITRO-GLYCERINE TRIUMPHANT.

While the continent stood aghast at the news of the terrible explosions of nitro-glycerine at Panama and San Francisco, which recently occasioned such deplorable losses of life and property, nearly the entire American press—and particularly those papers devoted to science—were either violent in their denunciations of the new and mysterious explosive, or preserved a politic silence. We believe that the JOURNAL OF MINING was the only scientific paper in America that came right out, and boldly defended the continued use of this invaluable adjunct in mining enterprises, at a time when it was feared that public opinion would forbid it. We then predicted that nitro-glycerine could not be "put down," and that prediction has already been triumphantly vindicated. After the successful public experiments recently made at Washington, in the presence of President Johnson and a large concourse of scientific men, the Committee on Trade and Commerce witnessed a further series of experiments which proved equally satisfactory. The result is, that a bill has been passed amending a previous prohibitory bill, and providing for the transport of nitro-glycerine under proper precautions. A company is now organized for carrying out the manufacture and supply of this article. The nitro-glycerine will be transported in hermetically closed tin cans, covered with plaster-of-paris, packed in boxes, and then loaded at the company's own wharf in its own vessels. The experiments at Washington abundantly proved that, with proper precautions, there was no danger attendant on the employment of this useful blasting material.

The California Mint.

Charges of extravagance, etc., have recently been made by parties in San Francisco against Mr. Swain, Superintendent of the Mint, in consequence of which John Jay Knox, formerly in charge of the Mint department in the treasury, has been sent by Secretary McCulloch to California to investigate and report thereon. Mr. Swain owes his position to the ever-to-be-lamented Starr King, who recommended him in the highest possible terms. Prior to his superintendency, the San Francisco mint was notorious for corrupt mismanagement, but since then there has been a great change for the better. We venture the prediction that Mr. S. will be entirely exonerated.

An Old Principle Newly Applied.

We notice an Oil Pump, invented by Mr. F. S. Pease, of Buffalo, whose superiority rests in the ap-

plication of the well-known air-pump to the lifting of fluids. The air being exhausted in the tail-pipe, the oil enters, and is prevented from returning by a valve. A pressure of air is now brought to bear on the surface of the oil, which drives it into a second pipe, and a second valve prevents its return. Thus the "pulsations" continue, and the oil is gradually driven up into the oil-tank. The pump is not, of course, confined to oil, but may be used for any liquid, and the pipes can be made in angles or curves.

Steel Superseding Iron.

The Bessemer steel works in England are now producing 500 tons of steel per week, with orders on hand to occupy them for several months to come. Steel is now applied to many purposes for which formerly iron only was used, among which may be mentioned steel ships, steel boilers, steel girders and columns. With respect to steel rails, Mr. H. Vivian, in the House of Commons, recently stated that he thought sixteen years' wear could be guaranteed to Bessemer steel rails, while hitherto the best rails that could be obtained have not lasted sixteen months.

Julian's Land Titles Bill.

It appears that Mr. Julian, on his Land Titles Bill coming up on Tuesday, moved that the further consideration of the bill should be postponed until December. We fully agree with him that the bill requires much further consideration, and it appears that he is of opinion that intelligent men in California and elsewhere think so too. But the House refused, by a vote of 51 to 58, to postpone it.

Scientific Meetings.

SOCIETY FOR THE ADVANCEMENT OF SCIENCE AND THE ARTS.

Monday evening Mr. Disturnell made some statements with regard to the manufacture of compressed fuel from peat. He exhibited specimens manufactured by the Albany Peat Company, which appeared to be of greater specific gravity than bituminous coal. He also exhibited the moss which grows at the surface of the peat bed. The peat before compression was, he said, a black putty-like mass. The cost of the manufactured article is about three dollars per ton, and it was expected to come largely into consumption. He also exhibited specimens of coal from Michigan, which were added to the collection of minerals in the Society's Museum. A discussion then took place on the climactic influence of the country about Michigan and westward. It appears that the climate there is exceedingly dry and exhilarating, insomuch that patients suffering from bronchial and pulmonary affections, on removing thither, have, in a short time, recovered their health. The rain-fall is much smaller than on the eastern coast; and, as an instance of the peculiar climate, it was stated that meat could be cured there with considerably less salt and much more certainty than here. The dryness of the air was also said to be shown by the Indian mode of treating the bodies of the dead. There, as in all countries where little rain falls, as in Egypt, Chili, Peru, etc., the dead are mummeyized, which usage occurs in no damp country. It appears, then that this curious custom has not been introduced from religious motives, but from the nature of the climate permitting the natural affection to retain the object of its love above ground, without that repugnance which a corpse, in other countries, occasions by its natural decay.

To Miners.

We have commenced the formation of a mineralogical and geological cabinet, to be free of access to all persons interested in such matters, and it is our desire to make it perfect and impartial as possible. To this end, we request the mining public to make such contributions as they conveniently can. We desire to have the whole continent represented.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

MANUFACTURERS DEPENDING ON MINING.

NEW YORK, June, 1866.

EDITOR JOURNAL OF MINING:

SIR—The accompanying alphabetical arrangement of manufactures, immediately dependent upon mining for their raw material, I have thought might be as interesting to some of your readers, as to myself, and, when printed, will be of interest for future reference, especially for comparison with the census reports of the next succeeding decennial enumeration.

R. P. STEVENS.

Hoes	$224,000	Lithography	848,000
Mowing machines	1,500,000	Locksmithing	195,000
Plows, har'ws, etc	2,875,000	Locomotives	4,866,000
Threshers, etc	900,000	Machinery	50,000,000
Anchors, etc	165,000	" tools	540,000
Anvils, etc	38,000	Magnesia	12,000
Axles	226,000	Metallic caps	5,000
Bank locks	30,000	Metal cocks	431,000
Bath tubs	62,000	Metal (white)	330,000
Bed springs	213,000	" spinning	3,000
Bells	224,000	" tube	68,000
Benzoline	2,000	Mill stones	270,000
Black smithing	11,641,000	Mowing knives	40,000
Black smiths' tools	2,000	Nails	9,857,000
Bolts, etc	2,175,000	Needles	1,000
Brass and bell found'g	110,000	" threaders	2,000
" and cop'r tub'g	250,000	Kerosine	2,112,000
" and G'r'n s'ly'r	2,401,000	Oil tanks	1,000
" clasps, etc	12,000	Ornaments	34,000
" founding	2,643,000	Paints	3,000,000
" ornaments	3,000	Pins	432,000
" wire	62,000	Pipes	5,000
Brick	10,000,000	" tongs	5,000
" machines	25,000	Plastering	4,900,000
Bronze	10,000	Plumbers	40,000
Car breaks	10,000	Plumbing	2,113,000
Carriage smithing	12,000	Porcelain	243,000
Car wheels	1,996,000	Pottery	2,463,000
Cement pipe	2,000	P'w'd'r flasks and caps	520,000
Chalk, etc	22,000	Presses	943,000
Chemicals	5,000,000	Pumps, etc	685,000
Chimney flues	3,000	Putty	35,000
Chimaware	185,000	Saddlery ware	435,000
Coffin screws	10,000	Sad irons	140,000
Coke	180,000	Safes	1,910,000
Coopers' tools	9,000	Saltpetre	190,000
Copper and brassware	145,000	Sand paper	54,000
Copper rolled	1,800,000	Safe metal	12,000
" sheet and bolt	1,398,000	Saws	1,257,000
" smelting	4,945,000	Scales	1,292,000
" smithing	1,281,000	Scythes	252,000
" work	162,000	Seal presses	39,000
Cotton gins	1,152,000	Sewing birds	17,000
Crucibles	150,000	" machines	2,247,000
Curriers' tools	5,000	" needles	97,000
Cutlery	1,366,000	" cases	50,000
Drain tiles	516,000	" shuttles	8,000
Edge tools	3,243,000	Shoe tips	149,000
El'tro m'gn'c m'ch's	50,000	" tools	259,000
Fire arms	2,362,000	Shovels	1,638,000
Fire brick	493,000	Silver manufacture	3,971,000
Fire engines	705,000	" plated, etc	3,676,000
Fish hooks	157,000	Speiter	19,000
Furnaces	888,000	Springs	2,117,000
Gas fixtures	2,255,000	Stair rods	149,000
Gas	12,016,000	Steam fitting	507,000
" meters	565,000	" gages	5,000
" works	4,000	" heaters	516,000
Glass	8,000,000	Steel	1,879,000
Glaziers' diamonds	20,000	Steering apparatus	3,000
Gold assaying	1,140,000	Stencils, etc	7,000
" leaf, etc	481,000	" tools	35,000
Grates	362,000	Stereotyping	286,000
Gun locks	6,000	Stone tools	1,000
Hardware	10,903,000	Stove polish	124,000
Hoisting apparatus	31,000	Stucco	45,000
Hooks and eyes	184,000	Teeth porcelain	367,000
Horse nails	181,000	Terra cotta	18,000
" shoes	106,000	Tin-foil	130,000
Hydrants	9,000	" ware	50,000
" cases	8,000	" tools	128,000
Ink instruments	1,026,000	" toys	53,000
Iron castings	36,638,000	" etc	16,718,000
" forged	36,537,000	Trunk frames	53,000
" pig	20,870,000	Type, etc	1,276,000
" steamships	914,000	Vault lights	40,000
Ising glass	3,000	Water closets	55,000
Jack screws	3,000	White lead	5,380,000
Japaned ware	247,000	" smithing	10,000
Jewelry	10,415,000	Whiting	195,000
" tools	14,000	Wire	2,018,000
Keys	15,000	" cloth	45,000
Lapidary	36,000	" rope	70,000
Lead manufactured	3,166,000	" steel	1,000
" sm'lt'g and min'g	1,176,000	" work, etc	478,000
Lightening rods	182,000	Zinc oxide	226,000
Lime	3,798,000	" paint	250,000

COAL—Introduction.

EDITOR JOURNAL OF MINING:

SIR—At last we may congratulate ourselves upon the appearance of a paper that has for its object the advancement of art and science among the mining population of this great country. Mining improvements are always accumulating; but being hidden from the common observer by the peculiar circumstances of the case, they are more slowly transplanted from one locality to another. Hence the value of a medium of communication such as the AMERICAN JOURNAL OF MINING. It is well known to persons conversant with the subject of mining, that vast interests are dependent upon the proper or improper methods employed in working the mine. It is a matter of interest to the land-owner, the coal company, and to the individual miner. The land-owner should be acquainted with the best method of mining and working coal, so that he may take precaution that the company shall work so as to ensure the most effective exhaustion of the mine. The officers of the company should understand the subject, because they have to select a competent manager, who shall raise the requisite quantity of coal at the least possible expense; and miners themselves ought to be instructed in the subject, so that they may secure a due regard to their personal safety and comfort, by means of proper ventilation and due precaution against accident. Hence it will be seen that a good system of mining is invaluable. I am a miner myself, and have thought I might be of service to my fellow-laborers by writing through your columns a series of letters on coal mining. I trust the time is not far distant when miners will endeavor, by untiring industry, to be nothing behind the more privileged classes of their brethren in enlarged intellectual attainment.

A MINER.

SHAWMUT, Elk County, Penn.

UTILIZING COAL DUST.

EDITOR JOURNAL OF MINING:

SIR—Some attention seems to be paid just now to the question of the best method of utilizing the immense quantities of coal dust, or slack, produced at our coal mines. In Cheshire, England, there is a great demand for this slack for the furnaces used in evaporating brine. It is also used to a considerable extent in other furnaces. The best method of burning it is one which I have seen employed during several years past with great success. Three tubes project from the boiler in such a manner that the water from the boiler keeps them filled; above this is a large hopper, capable of containing, say ten or twenty hundred weight of coal dust, the bottom of the hopper being an iron plate, with slits allowing the coal dust to fall between the tubes upon the furnace-fire beneath. A raker, connected with the engine, travels very slowly backward and forward on the face of the plate, causing the coal dust to fall gradually and constantly through each slit in succession upon the fire. The consequences are that the fire can be regulated to any degree of heat; a perfect combustion occurs; the smoke is consumed, the bottom of the boiler is not so liable to be burned; and much manual labor is dispensed with.

W. F. S.

NEW YORK, July 5th, 1866.

Original Papers.

[WRITTEN FOR THE JOURNAL OF MINING.]

SALT—Number Seven.

By FRANCIS F. ENGLEHARDT, Ph. Dr., Professor of Chemistry in St. Francis Xavier's College.

In other parts of Germany, rock salt is ound, and is mined as such, as at Hall and Westheim in Würtenberg, at Wimpfen in Hesse Darmstadt, and Reichenthal in Bavaria. Salt was found in a mountain at Bex, in Switzerland, in 1823, in a vein from two to fifty feet in thickness. In 1846, the solid rock had already been entered for more than 4000 feet, by a height of 600 feet. The salt, after it has been mined, is usually dissolved in large reservoirs cut in the solid rock within the mine; and when the brine is of sufficient strength, it is conducted by wooden pipes into the salt factories for artificial evaporation. In France we meet with rock salt only along the Pyrenees, and in the eastern part of the empire in the department of Meurthe, at Vic and Dieuze, where the shafts have been sunk through thirteen consecutive beds of salt, amounting to about 223 feet in average thickness. The salt region is sixteen miles long by nine miles wide, and was first discovered in 1819 at a depth of 65 meters. At Cardona, in the province of Catalonia, Spain possesses the celebrated salt mountain—a hill 330 feet high and three-quarters of a mile area. Four-fifths of the entire mass is salt, the greater part of which, after being mined, is crushed, and being washed is put into use. In former years, the produce of salt at Cardona frequently amounted to a value of $200,000. Rock salt is found elsewhere in Spain, as at Villa Rubia, southeast of Aranjuez, and Mengranilla, near Villagordo, in the province of Cuenca. Crossing over to England, we find salt layers containing rich deposits of rock salt in Worcestershire, and in Cheshire at Northwich, and Winsford on the river Weaver. England is at present the greatest salt producer in the world; not because her natural resources are less exhaustible than those of other countries, but because she has the commerce of the world in her hands. The entire production of Great Britain is not less than 1,500,000, of which only about 150,000 tons are rock salt. The rock salt mines were discovered accidentally in 1670, while sinking a shaft

for coal at Northwich. The salt occurs in this locality in two beds. The strata penetrated are gypsiferous clays and marls, of about 120 feet in thickness. Next comes the first salt stratum of thirty to forty feet in thickness, resting on a layer of indurated clay of the same strength, after which a large salt stratum of one hundred feet in thickness is entered. The salt is found in detached pieces, not stratified, but arrayed in spheroidal masses, from five to eight feet in diameter, and composed mostly of concentric coats. It may be interesting to mention that the ground in the neighborhood has sunk so considerably that bridges had to be rebuilt houses to be evacuated, and even a lake of one hundred acres was formed in consequence. The mines are about 220 feet deep, and are worked by the help of gunpowder in the usual way. In Ireland, two beds of rock salt of 120 feet thickness, were discovered in 1857 at Carrickfergus, near Belfast, 630 feet below the surface. The rock above is a kind of red marl. Italy produces most of her salt from sea-water; nevertheless she must be ranked, according to her natural resources, next to Austria and Spain. In Sicily, salt is found in great quantities at Ragalmuto, Caltanisetta, Castrogiovanni, etc. On the main land, salt mines occur at Volterra, in the former Grand Duchy of Tuscany; at Alta Monte, and Nicty, in Naples; at Arbon, in Savoy; in Calabria, and in the valley of Clavalista, in the province of Aosta. Moldavia and Walachia produce considerable quantities of rock salt—in the mines Okna in Walachia, Okna at Rimnik, Okna at Kimpina, and Okna Telcaga. The Turkish Empire possesses rock salt, both in Europe and in her Asiatic dependencies, but, as far as I know, the mines are not worked. In Russia, rock salt is found in the department of Perm, and two mountains near Astrachan contain great layers of it. In the salt steppe of Orenburg is a freezing cave, so called from the fact that, during the summer months the cave is so cold that icicles line its walls, while in winter it is so much warmer than the external air, that the Russians sleep in it without their sheepskins. In Asia rock salt mines have been worked since ancient times. It is found in Armenia, at Nakhshwan, and at Kagisman, on the Araxes. The little State, Hisear, possesses rock salt. In Antalonia, rock salt occurs at Kaisariyeh; and on the left bank of the Halys, near Tuzkeny. Both Kurdistan and Messopotamia have rock salt mines. Arabia has rock salt on the east side of the Dead Sea, and in the Peninsula of Sinai. In Persia, rock salt is found at Tauris and Kuhenemek (salt mountain); in the Himalaya Mountains, at Punjaub; at Iscordo and at Yumila, on the Indus. Below the city Callabough, the street is cut through rock salt, and this mineral occurs in many places along the Indus, rising more than one hundred feet above its level. India has salt in the province of Lahore, and the Valley of Cashmere; Asiatic Russia and China also possess rock salt. The Island of Ormus, in the Gulf of Persia, is said to consist mostly of salt and gypsum, without possessing a drop of sweet water or a blade of grass. The valley of salt where David defeated the Syrians, is supposed to be that near Tadmor. In Africa, rock salt is not less abundant than in Asia. In the Sahara Desert, especially in the portion called Tannezruft, are both salt plains and rock salt. It has several salt mountains; for instance, one near Biskra, and another near Lake Zagrez. In Algiers, Mount Jibbel Haddeffa is mostly salt, and the same may be said of the mountain near Swotoja. In the province of Oran, near Constantine, rock salt mines are worked. The city Qualet receives its salt from the mine Quaden, in the great desert, and Abysinnia has salt at Assala, on the Dead Sea. In Australia, rock salt has been found, but being a new country, little attention has yet been paid to it. In South America, rock salt is abundant in Brazil, Venezuela, Peru, New Grenada, La Plata, Patagonia, and Bolivia. The New Grenada salt deposits extend many miles across the Cordilleras, in the district of Zumpaguira. General Mosquera asserts that the mines in the neighborhood of Bogota alone produce salt to the value of one thousand dollars per day. The followers of Columbus discovered the rich salt mines of Araya, in Venezuela, as early as 1499, and since that time they have yielded, very largely, salt of superior quality. The same State has inexhaustible mines at Laguayra. The great natural salt resources of Peru are in the southern part of the State, where, in some localities, salt abounds in blocks to such an extent that the inhabitants use them instead of brick or stone in building their houses—rain being here of exceedingly rare occurrence. Mines of rock salt are found at Julloma, Caragnara de Carangas, on the river Langacolla, and near the city Potosi. Among the West India Islands, St. Domingo possesses one of the most remarkable salt mountains in the world; it is found near the village of Salina, on the southern part of the Island, in the province of Arua. The salt mountain is stated to be six miles long, from one-half to one mile wide, and from four hundred to five hundred feet high. The upper surface is covered by a layer of earth and loose stone, about fifteen to thirty feet in thickness. The salt is of very good quality. In the United States, rock salt has been found in Washington county, Western Virginia. In Oregon, on the Salmon River Mountain, and during the war the Southerners discovered rock salt in Louisiana. Most of the salt localities enumerated prepare the greater part of the salt obtained by dissolving it in water and evaporating the brine, which will be more fully described when we come to consider the manufacture of salt from brine.

[WRITTEN FOR THE JOURNAL OF MINING.]

LEAD FIELDS OF THE UPPER MISSISSIPPI—No. Four.

GALENA.

By J. VANCLEVE PHILLIPS.

As to the upper Galena "diggings," the ridges above town have a greater thickness of the upper Galena rock, and numerous parallel large gash veins have been worked. These, in a few places, have been followed to the lower Galena rock, or flint opening of the mines, but this rock is not found so rich in ores as the upper rock; whereas at New Diggings, Shulsburgh, and various other points, the lower Galena and blue limestone are the bearing rocks. At Dubuque, the lower Galena limestone under the gash veins, has yielded ore only in limited quantities, so that the operator for lead ores must not suppose that all that is necessary to get ore is to drain the lead measures below the water line, either by adits or pumping. The old observing practical miners who had studied this lead-field for years by observation—that is to say, had read the practical and economical geology of the lead measures and veins, which are seen in the great volume of Nature, like so many pages written in Lyells Principles, or De La Beches' Geological Observer, are mostly gone to California, Colorado or the Reese river country—they would have been the proper mining captains and engineers for successfully directing capital to mine lead ores. The parties who will bring lead properties in the market to sell as a general rule, will be a different type of men, and will not know so much practically about the system of the lead veins, and caution must be used by the capitalists in the purchase of lead property, or investment in lead mining, or his money may be used to drain dead beds of rock, or explore outcropping ores along the edge of some lead basin, where the observing miner would have conclusive evidence that the ground is barren. Our mining system is still in its infancy. Capital is used at random, yet each year science takes bold steps, and the business comes more and more under the control of experienced parties, and greater results are achieved. What was known as the Whitam vein was discovered in 1844. The discoverer was a blacksmith, and when not engaged in his shop, had gone on a ridge about a mile back from town, and discovered an east and west crevice. This crevice was seen west four hundred yards, when it crossed a valley with bare walls of rock on each side. Whitam had gone east this distance, where there was a small ravine near the summit of the ridge, and by sinking through six feet of clay, had found this crevice, which was two feet wide and filled with clay and a few small pieces of ore. On sinking down ten feet, the crevice closed to a tight seam, and he then commenced to sink a shaft, blasting out the rock, and followed this seam eighty feet deep, at which point it expanded, and was filled with an east and west lead vein. This vein was worked one hundred and twenty feet deep, and in chimneys made up to near the surface of the ground was worked six hundred feet east and west, and yielded five million pounds of seventy per cent lead ore. The ore was limited in depth to the upper galena limestone, and was a true type of the gash veins. What was known as the Old Buck lead vein, was distant a few hundred yards, and made in a crevice running parallel with an east and west ridge. The ore cropped out at the end of the ridge, where a valley was cut down in the lead measures one hundred and fifty feet deep. The Indians have discovered the floating ore along the side of the ridge, and raised several tons of ore at a depth of two and three feet from the debris of clay, sand, flint and fragments of limestone that covered the sloping ground of the ridge. The vein proper was discovered about 1827, on the upper part of the ridge under a broken kind of cap rock—ore weighing tons, being found at a depth of ten and twenty feet from the surface lying in a matrix of clay, sand and ochre, in a gash vein between solid wall rocks of limestone. This was worked east some six hundred feet, and yielded a large amount of ore. About three hundred feet distant south, was discovered a parallel crevice known as the Doe vein. Centrally between these crevices had been a prospect shaft sunk seventy feet deep, and a small seam of ore discovered running south; the shaft had been abandoned, and stood for many years, when another miner cleaned it out, and drifting a few feet on this seam, discovered another east and west crevice. This was filled with ochre and small ore, when raising up the crevice some twenty feet, another vein of the same type as the "Buck" was found. This is being worked at present in the lower Galena limestone, below the gash vein which made in the upper rock, and is said to be paying largely. This vein being an exception to the general rule of the gash veins in the upper Galena limestone, not being productive in the lower beds of the lead measures. South of Galena river is a series of oblong-shaped mounds, formed of Niagara limestone, named Waddell, Bayliss, and others. These rise up six hundred feet above the river, and form the divide or water shed between that stream and Small Pox creek, distant five miles south. The lead mines are worked along these dry ridges for three or four miles up and down the river. The ores were in gash veins in east and west fissures, parallel, fifty, one hundred and fifty, and three hundred feet apart, and all of the same type of veins as those described. The description of the Whitam vein, with some modification applies to all the others. These discoveries have yielded from a few tons up to several millions of pounds from an individual vein. In the country going north, these veins work under a cap rock, shale and surface water. On the south side of the river towards the mounds, the shale overlying the lead-bearing rocks, holds up surface water, and there has been but little prospecting done. The geographical and economical position of the lead veins discovered and worked about Galena, may be stated somewhat as follows: The ores occur in the ends of dry ridges, which are the termination or small branches of a great divide or water shed that branches from the Platte mounds, distant twenty miles. (North Galena diggings.) They are gash and pipe veins. The former in the upper Galena limestone, the latter in the lower Galena rock. The district is in the southern part of the lead field. The ores worked are the outcrop of the system of veins, that will be found in adjacent districts, and the ore raised, although amounting to as much as two hundred million pounds of seventy per cent. ore, is but a fraction of the wealth yet to be mined in this part of the lead fields.

MINING COMPANY STATEMENTS.

WYOMING SILVER MINING COMPANY; CAPITAL STOCK $1,000,000; SHARES $100 EACH; OFFICE 141 BROADWAY, NEW YORK.

The Trustees state that this Company owns four ledges of silver-bearing quartz, located near La Platte, in the Mountain Wells District, State of Nevada, known as the Washington, Walter Scott, Fairview and Wyoming, 4,200 feet in length, the lodes being from three to six feet in width, from which good assays have been made.

DIVIDENDS.

A dividend of five per cent. has been declared the Philadelphia Ocean Oil Company, and one of three per cent. by the Philadelphia and Boston Petroleum Company.

MEETINGS.

Lincoln Silver Mining Company, 172 Broadway, July 12th, and Columbia County Iron Mining Company, 77 Cedar street, July 10th, will meet to select trustees.

NEW YORK STOCK MARKET.

MINING.	June 30. BID.	June 30. ASKED.	July 2. BID.	July 2. ASKED.	July 3. BID.	July 3. ASKED.	July 4. BID.	July 4. ASKED.	July 5. BID.	July 5. ASKED.	July 6. BID	July 6. ASKED.
Ada Elmore		3 40	3 00	3 25						3 25		3 20
Altona	2 60										2 50	
American Flag		2 00		2 00						2 00		3 00
Atlantic & Pacific	2 00	2 50	2 00	2 50					1 00	2 50	2 00	2 50
Bates & Baxter Gold	1 50	2 00	1 60							2 00		2 50
Benton Gold	1 75	1 80	1 75	1 85					1 75	1 85	1 70	1 80
Bobtail Gold										3 00		3 00
Bullion Consol. Mn'g. Co												
Consolidated Gregory	18 85	18 95	21 25	21 50					20 40	20 50	20 60	21 00
Corydon	1 50		1 10							2 25		
Downieville Gold		55	53	55						54	53	55
Eagle Gold												
Gold Hill												
Gunnell Gold	1 03	1 05	1 05	1 08					1 08	1 12	1 11	1 14
Gunnell Central		5 00		4 50								5 00
Holman	34	37	30	40						38	34	40
Hope Gold	2 75	3 00								3 50	2 50	3 50
Kipp & Buell Gold	1 40	1 60							1 40	1 75	1 35	
Liberty Gold	10	25	10	25								25
Lichig Gold				1 00								1 00
Manhattan Gold												
Montana				1 00								
New York	46		50						51		60	
Quartz Hill	3 55	3 75	3 60	3 70					3 25	3 60	3 60	4 00
Rocky Mountain Gold	3 55	3 65								3 75	3 60	3 70
Silver Eagle												
Smith & Parmelee Gold	9 30	9 40	9 00	9 25					9 05	9 25	9 20	9 25
Texas Gold			25									45
Virginia City			50	40	50				41	50		50
Waddingham Gold												
Bedford Copper												
Caledonia Copper												
Canada Copper				1 00								10 00
Evergreen Bluff Copper												1 25
French Creek Copper												
Hilton Copper												
Central Copper												
Copper Falls												
Sheldon & Columbian Cop											4 00	
Knowlton Copper										4 00		4 00
Mendeta Copper		4 00		3 50								
Minnesota Copper												
Norwich Copper												
Ogima Copper												
Quincy Copper												
Superior Wisconsin												29
Denbo Lead			10	20								
Phœnix Lead & Mining Co		2 00										2 75
Redwood Lead		2 75									85	1 00
Wallkill Lead	85	95	55	1 00								
Columbian Coal												
Schuylkill Coal												
Lake Superior										1 00		1 00
Copake Iron		1 00										
Foster Iron												
Annular Drill												
Eagle Gold												
Rockland												12 00
Isle Royal		12 00										
British American Coal												
Princeton Copper												

OIL STOCKS.

Bennehoff Run	11 55	11 60	11 40	11 75					11 00	11 40	11 15	11 40
Buchanan Farm	30	35	30	32					28	32	29	31
Central	2 25	2 50	2 20	2 50					2 25	2 50	2 35	2 50
Excelsior	44	50	44	49						50	45	55
First National	6	7	6	10					6	8	6	9
Ivanhoe				2 65					2 75	2 80		
N. Y. & Alleghany	4 35	4 45	4 25	4 70					4 00		4 10	4 35
Northern Light		2 00		2 00						2 00		
Oil Creek of N. Y.	35	50		40						45	25	45
Pit Hole Creek	2 55	2 65	2 55	2 75					2 50	2 65	2 50	2 60
Rynd Farms	23		22	30					22		23	30
Shade River	50	55	50	55						59		45
United States	7 35	7 75	7 70	8 00					8 00	8 25	8 00	8 15
Palmer Petroleum												
Union												
Empire and Pit Hole												
Venango & Pit Hole												
Allen Wright												
Bergen Oil & Coal												
Bennehoff & Pit Hole												
Equitable												
Fee Simple												
Forest Co. Petroleum Co.												
Gt Western Consolidated												
Guild Farm												
Heydrick Bros												
Homowack												
Lilly Run												
Oak Shade Petroleum												
Penn. Oil Creek												
President												
Southard												
Sherman & Barnsdale												
Sherman Oil												

FREE LIST.

Bennehoff Run Oil	3 30	3 45	3 20	3 50					3 50	3 75	3 50	3 75
Brevoort	1 15	1 50	1 25	2 00					1 25	2 00	1 25	2 00
Bliven	50	1 00										
Brooklyn		50	40	49						55	25	75
Bradley	5	10	5	10						4	10	4
Cherry Run Petroleum Co		20										10
Clinton Oil	1 10	1 75	1 10	1 50					1 10	2 00	1 10	
Consolidated (New York)												
Empire City Pet'm Co	15	30	15	40						15		15
Eclectic Oil		2 00		2 00						2 00		
Enniskillen												
Germania	10		8	12					5			
Hamilton McClintock	70	2 50		1 15						1 00		
Heydrick	21	25	20	25					19	30	20	25
High Gate	8	12	6	15						15		10
Liberty										20		
Mt. Vernon	10	25								25		
Manhattan	14	15	19	22					18	20	19	20
National										12		
New York & Newark	6	9		12								12
New York, Phil. & Balt				14								
Second National	10	50	10	75						50	25	50
Oceanic	9			12					8	10	8	9
Pepper Well		3 00	2 00	3 00								
Pit Hole No. 2										1 15		
Pit Hole Farms		1 25		1 50							6	8
Pet. Consolidation	5	10	5	10								
Tack Petroleum Co., N.Y.	5											
Union	3 50		4 00						3 50		3 50	
United Petroleum Farms	20	25	20							20		20
West Va. Oil & Coal Co.	3											
Webster	15		15						14	30	15	25

BOSTON STOCK MARKET.

Reported for the Journal of Mining by Lombard & Co., 99 State Street, Boston.

COAL.

Companies.	June 29. BID.	June 29. ASKED.	June 30. BID.	June 30. ASKED.	July 2. BID.	July 2. ASKED.	July 3. BID.	July 3. ASKED.	July 4. BID.	July 4. ASKED.	July 5. BID.	July 5. ASKED.
Belmont	2 75	3 50	2 75	3 50	2 75	3 50	2 75	3 50			2 75	3 50
Eagle Hill Mutual	40	75	50	1 00	50	1 00	50	1 00			50	1 00
Collins	80		80		80		80					80
Continental												
Franklin	3 00	3 50	2 75	3 00		3 00		3 00				3 00
Gilberton	30 00	35 00	30 00	35 00	30 00	35 00	30 00	35 00			30 00	35 00
Glenville	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50			2 00	2 50
Harleigh	45 00	55 00	45 00	55 00	45 00	55 00	45 00	55 00			45 00	55 00
Lackawana	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00			5 00	7 00
Lorberry												
Locust Dale	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00			17 00	19 00
Mammoth Vein	10 50	11 50	11 00	12 50	11 00	12 50	11 00	12 50			11 00	12 50
Mount Pleasant	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00			28 00	30 00
New England	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00			28 00	30 00
Short Mountain	22 50	23 00	22 50	23 00	22 50	23 00	22 50	23 00			22 50	23 0
Summit Branch	12 00	14 00	12 00	14 00	13 00	14 00	13 00	14 00			12 00	14 00

MINING.

Albany and Boston	5 00	10 00						10 00				
Bay State	9 00	11 00	9 50	11 00	9 50	11 00	9 00				9 50	10 00
Boston	75	1 00	75			1 00		1 00				1 00
Central												
Concord	3 25		3 00	3 75	3 00	3 75	3 00				3 00	
Copper Falls		42 00	41 00	41 50	40 00	42 00	40 00	41 50			40 00	41 75
Franklin	39 25	41 00	40 25	41 00	40 00		41 00				40 50	43 00
Hancock	22 75	23 00	22 75	23 00	22 75	23 00	22 00	23 00			22 25	22 87
Humboldt	4 50	5 00	4 00	4 50		4 50		4 50			3 00	4 25
Huron			38 50	38 50		39 00					38 50	
Isle Royal	6 50	12 00		11 50	8 00		8 00					12 00
Mesnard	1 75	2 00	1 75		1 75	2 00	1 75	2 00				2 25
Minnesota, asst. pd	8 00	11 00		10 00		10 00		10 00				9 75
National				20 00			10 00					
Petherick	4 50	5 00	4 00	4 50			4 25	5 00			4 25	4 50
Pewabic		36 00	34 00	36 00		35 00	34 00	35 00				35 00
Phœnix	5 00	9 00	5 00	9 00	4 00	9 00		8 00				9 00
Pittsburg	45 00	50 00	46 00	48 00	46 00	46 50		46 50				50 00
Pontiac		1 25	75	1 2	1 00		1 00				1 00	1 50
Quincy		48 25	45 00				45 00				46 00	
Rockland	5 75			6 75	6 00	6 75	6 00	6 75			6 25	6 75
South Side	1 75		1 50	1 75	1 62			1 75				1 75
Star, asst. pd		1 50		1 50	1 25	1 50		1 50			1 00	
Superior	3 25	3 50		3 75	3 12	3 50	3 12	3 50			3 12	3 50
Toltec	1 75	9 00	2 00		3 00	10 00	2 00	10 00			2 00	10 00
Winthrop	1 00		1 00		1 25		1 25					
Consolidated Gregory Gold	19 25	19 35	18 80	19 00	20 00	21 00	19 50	21 00			20 00	20 10
Quartz Hill Gold	3 65	3 90	3 50	3 60	3 60	3 75	3 65	3 75			3 25	3 65
Smith & Parmelee Gold	9 40	9 60	9 30	9 50	9 00	9 50	9 00	9 50			9 05	9 10

PETROLEUM

Beebe Farm		6 50	6 00	7 50	6 00	7 50	6 00	7 50			6 00	7 50
Boston and Kentucky	10		25	10		25		25				25
Boston Oil Creek Land Co	15		30	15	50	15	50	15			15	50
Boston Petroleum Oil Co	60	2 00	50	2 00	50		50				50	
Botolph Oil Well Co	75	1 50	75	1 50	75	1 50	75	1 50			75	1 50
Crescent Petroleum Co		1 00		1 00		1 00	90	1 00				1 00
Everett Oil Co	7	25	7	25	7	25	5	15			5	15
" (Pref. Stock)	50	80	45	1 00	65	1 00		1 00				1 00
Farrar	4 00	6 50	4 00	6 50	4 00	6 50	4 00	6 50			4 00	6 50
Fuller Farm	17	20	17	20	18	22	18	22			18	22
Great Basin	3	20	3	20	3	20	3	20			3	20
Indian Spring	15	30	15	30	15	30	15	30			15	30
Mass. and Oil Creek	35	50	40	50	40	50	45	60			50	60
New England	6	10	6	10	6	10	6	10			6	10
New York and Boston	30	55	25	40		50		30				30
Pepper Petroleum	2 00	3 00	2 00	3 00	2 00	3 00	2 00	3 00			2 50	2 75
Pittsburgh and Boston	2	15	2	15	2	15	2	15			2	15
Tremont	2 00	3 00	3 00	4 00	2 00	3 50	2 00	3 50			2 00	3 50
Suffolk and Oil Creek	10	30	10	30		30		30				30
Winthrop	2	15	2	15	2	15	2	15			2	15
Independ. of U. S. & C. W.												

New York Companies.

Bennehoff Run	11 75	11 85	11 60	11 75	11 40	11 50	11 40	11 50			11 00	11 15
Bergen Oil and Coal												
Bradley												
Buchanan Farm	30	34	30	33	30	35	30	35			30	32
Central	2 05	2 10	2 25	2 50	2 20	2 30	2 20	2 30			2 25	2 30
Cherry Run	15	20	15	20	15	24	15	20			15	20
Consolidated												
Empire City	15	30	15	30	15	30	15	30			15	40
Empire and Pit Hole												
Excelsior	42	45	44	50	44	50	44	50			40	50
Northern Light		2 50		2 50		2 00		2 00				2 00
Oceanic												
Oil Creek	35	50	35	50	40	50	40	45			37	45
Palmer Petroleum												
Freshlent												
Pit Hole Creek	2 50	2 60	2 25	2 50	2 55	2 75	2 55	2 75			2 50	2 60
Rynd Farm	22	27	22	30	23	30	22	30			22	30
Union												
Webster												
Stewart's Run	13	25	15	25	15	25		25				25
United States	7 70	7 80	7 30	7 50	7 70	7 90	7 70	7 90			8 00	8 10

PRICES OF ASSAYING IMPLEMENTS.*

[CORRECTED WEEKLY.]

Smelting Furnaces	$35 00@ 40 00
Cupelling "	35 00@ 40 00
Scales	10 00@ 30 00
Assay Balances and Weights	100 00@200 00
Plumbago Crucibles	25@ 1 50
Paris "	15@ 1 25
Porcelain Evaporating Dishes	25@ 5 00
Fire Tongs	75@ 3 50
Hammers	1 00@ 2 50
Funnels	15@ 1 00
Litmus Paper, quire	1 00@ 1 25
Ingot Moulds	1 25@ 3 00
Flasks, Bohemian Glass	15@ 1 00
Sand Baths, Iron	25@ 1 00
Pivers	50@ 2 00
Mortar and Pestle, Iron, Agath, etc	50@ 20 00
Lamps, Gas and Alcohol	75@ 5 00
Blowpipes	50@ 3 00
Hydro-Oxygen Blowpipes	25 00@125 00
Pincers, or Cutting Pivers	75@ 1 50
Glass Tubes, German, etc., per lb	75@ 1 50
Muffler	50@ 1 50
Anvils	1 00@ 2 00
Cupel Moulds	3 50@ 5 00
Cupels, per doz	50@ 3 50
Bone Ash, per lb	25@ 50
Test Lead, "	50@ 75

* These articles can be procured at the stated rates, by sending order, with remittance, to

WESTERN & COMPANY, 37 Park Row.

CHEMICALLY PURE PREPARATIONS USED IN THE VOLUMETRIC ASSAY.

Acid, Acetic	$0 75 lb
" Arsenious	0 05 oz
" Hydrocholoric	0 50 oz
" Nitric	0 60 lb
" Oxalic	0 20 oz
" Sulphuric	0 75 lb
Ammonia	0 60 lb
Baryta, Carbonate	0 20 oz
" Hydrate	0 40 oz
" Nitrate	0 12 oz
Barium, Chloride	0 12 oz
Copper, Sulphate	0 10 oz
Iodine	0 75 oz
Iron, Sesquichloride, Cryst	0 25 oz
Lead, Nitrate	0 10 oz
Mercury, Peroxide	0 20 oz
" Protonitrate	0 25 oz
" Chloride	0 20 oz
Potassa, Carbonate	0 25 oz
" Bichromate	0 15 oz
" Bichromate, Fused	0 20 oz
" Chromate	0 15 oz
" Hydrate	0 40 oz
" Ferrocyanide	0 25 oz
" Permanganate	0 18 oz
" Sulphate	0 10 oz
Silver, Nitrate	Gold 1 10 oz
Soda, Acetate	0 10 oz
" Carbonate	0 10 oz
" Hydrate	0 20 oz
" Phosphate	0 10 oz
Sodium, Chloride	0 10 oz

MARKET REVIEW.

FRIDAY EVENING.

Gold is at about the same price at which it was quoted on this day week, the price at 2 o'clock being 154⅝.

The exports during the past week were	$ 550,574
Previously reported	44,942,564
Since 1st of January	$45,493,138

The supply of capital seeking investment is so large, and the demand for business accomodation so small, that the recent heavy exports seem to have had little effect upon the loan market. The rate is five per cent. Discounts quiet at 5½@8 per cent. Foreign exchange is firm. Bills on London at sixty days, 106¼@107¼ for commercial; 108½@108¾ for bankers; do. at short sight, 110@110¾. Paris at sixty days, 5.10@5.17½.

In mining stocks we notice an advance in Consolidated Gregory from $18 95 on Saturday to $21 50 to-day; Gunnel Gold from $1 05 to $1 15@$1 12; New York Gold from $46 to $60. Other shares have not been much dealt in.

In oil stocks Benezhoff Run has declined from $11 760 to $11 40, and Benezhoff Run Oil has advanced to $3 50. Besides these there have been but few sales during the week.

The market for metals is somewhat unsettled, owing to the pending tariff changes combined with the rise in gold.

Copper—Is somewhat firmer. We note sales of 150,000 lbs. Baltimore at 33c.; 75,000 lbs. Detroit, at 33c. @ 33½c.; 100,000 lbs. Lake, at 33c.@33½c. The Baltimore Company's price is now 34c.

Iron.—The sales of Scotch Pig have been small, the stock being held in expectation of higher duties; 150 tons Glengarnock at $46 50 ex yard. There have been considerable transactions in American. On manufactured iron there is an advance of $5 per ton all round.

Steel—No change.

Lead—Shows an advance on last week's quotations; it is firmly held and with few transactions. Sales of 100 tons Spanish and English, at 7¼c.@7⅝c. per lb. gold, and in small lots at 7⅜c.@7½c. gold. The stock is 3,800 tons, against 4,500 tons last year, and 9,000 tons in 1864.

Tin—Has also advanced; market firm, but no great demand. Sales of 150 slabs Banca, at 19¾c. gold; 100 slabs 19c.@20c. The stock of English is small, say 2,500 slabs; of Straits 23,900 slabs; of Banca 3,200 slabs. Tin plates are quiet; I C charcoal, $9 87½@$10; I C coke, $7 50@$9 50; charcoal terne, $9 50@$9 75; and coke terne $7 25@$7 50, all gold.

Spelter.—Silesian is somewhat higher, owing to the European war, among other causes. Sales of 250 tons, at 6¾c. gold; 150 tons, at 10½c.@10½c., currency. Of Lehigh there is scarcely any on the market.

Zinc—Unchanged. Sales of 25 tons Lehigh sheet in casks, at 14c. cash.

Salt.—There are no cargoes in port unsold; 5,000 to 6,000 bags are reported sold, to arrive, at about $2 75, gold. Sales of 30,000 bushels Turk's Island, are also reported sold on private terms.

Petroleum—Is still quiet, but with a little more business doing. We note sales of 1,800 bbls. crude on the spot at 23½c.@24c.; 1,000 bbls. bonded, at 42c. for standard white; and 800 bbls. at 40c. for prime light straw to white; 55c.@56c. for refined free per gallon.

Coal—Is quiet. Liverpool gas cannel is quoted at $14@$14 50, and anthracite in small lots at $8 50. The following is a statement of coal transported on the Delaware and Hudson Canal for the week ending June 30th, 1866:

	Week.	Season.
Delaware and Hudson Canal Co.	45,750	513,228
Pennsylvania Coal Co.	235	8,108
Total tons	45,985	521,336

For the same period last year:

	Week.	Season.
Delaware and Hudson Canal Co.	33,418	299,834
Pennsylvania Coal Co.	590	16,771
Total tons	34,008	316,605

FOREIGN MARKET REVIEW.

WEEKLY METAL REPORT.

LONDON, June 22, 1866.

The continued high rate of discount, combined with the commencement of war on the Continent, causes great dullness in the metal market. There are, however, signs of more animation in some articles at the present comparatively low prices.

IRON.—No improvement can be reported in either Welsh or Staffordshire Iron. Orders are getting more scarce, and makers more willing to make concessions. Scotch Pig Iron, after touching 50s, 6d., has advanced to 55s. cash.

COPPER.—The market is dull, both for English and Foreign, and the transactions that have taken place have been at lower prices.

TIN.—Rather more business has been done in Straits Tin for consumption and export, at prices varying from £75 10s. to £78, according to quality and prompt. Banca has changed hands to a small extent at £79. The Dutch market is steady at 45l.; but English Tin is dull.

TIN-PLATES show as yet but slight signs of recovery.

LEAD.—The war on the Continent has not had the slightest effect on this metal; the market is dull.

SPELTER.—Influenced by the war on the Continent, and a large speculative inquiry, has advanced materially; a considerable business has been done at prices varying from £20 to £25, the latter being the closing quotation. Outport Spelter realised the same as London; special brands, 5s. extra.

VON DADELSZEN & NORTH.

OIL TRADE CIRCULAR.

LONDON, June 22, 1866.

REFINED PETROLEUM.—1s. 10d. to 2s. 1½d.

AMERICAN CRUDE.—£16 per ton.

SPIRIT.—The large stock has caused rather a decline in price.

LUBRICATING OIL.—Without improvement. £12 to £24.

COAL OIL (Refined).—A few sales have been made at prices varying from 1s. 8d. to 1s. 11d. per gallon. Inferior qualities can be bought at even a lower figure.

OYCE-RUN.—£11 10s. to £12 10s., in casks, in London.

CRUDE.—Large quantities are offering, but buyers refuse to give the price asked. A parcel of very inferior quality has been sold in Liverpool at a price not much more than sufficient to pay for barrels and carriage.

GREASE.—No change.

PARAFFIN WAX.—1s. per lb.

PARAFFIN SCALES.—2d. to 4d. per lb.

STRANGE BROTHERS & Co.

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

ANTIMONY	Regulus, ₱ lb.	$ 00 12½@$ 00 13	
	Crude	.. ..	.. ..
BORAX		.. 33	.. ..
BRIMSTONE		67 50	72 50
COPPER	Ingot, Lake Superior, ₱ lb., cash.	.. 32½	.. 33½
	Baltimore	.. 33	.. 33¾
	Pig Chili	.. ..	.. ..
	Bolts	.. 43	.. ..
	Braziers	.. 42	.. 43
	Sheathing	.. 45	.. ..
	Yellow metal	.. 33	.. ..
IRON—Pig	No. 1 Scotch, ₱ ton	46 00	48 00
	No. 1 American	46 00	48 00
	No. 2 "	.. ..	.. ..
	No. 2 Charcoal	.. ..	.. ..
Bar	Swedish, ordinary sizes	170 00	.. ..
	Amer. and Eng refined	125 00	145 00
	" " common	115 00	120 00
Rails,	American currency	.. ..	.. ..
	" English gold	.. ..	.. ..
Horse shoe iron		150 00	160 00
Rods	5-8@3-16rd. and sq.	130 50	185 00
Band		155 00	.. ..
Nail rods,	5-8 and 3-16	122 50	185 00
Hoops		160 00	225 00
Sheets,	Russian, ₱ lb	.. 28	.. 30
	" English "	.. 6¼	.. 9
	" American "	.. 25	.. 25½
Boiler Plates,	English	.. ..	.. ..
	" American	.. ..	.. ..
STEEL	Best cast in bars, war	.. 26	.. ..
	Best sheet cast, "	.. 26	.. ..
	Best cast circular saw plates 46 in.	.. 32	.. ..
	Double shear steel, war	.. 26	.. ..
	Single " " "	.. 23	.. ..
	Montague & Co. C. S., in bars	.. 23	.. ..
	Round machinery cast	.. 17	.. ..
	Best German	.. 17	.. ..
	Government German	.. 14	.. ..
	Eagle German	.. 16	.. ..
	(L.) Blister, war	.. 22	.. ..
	W. Jessop & Sons, blister, war	.. 20	.. ..
	Double refined	.. 28	.. ..
	Stone Axe shapes	.. 28	.. ..
	Common blister	.. 16	.. ..
	2d quality sheet	.. 23	.. ..
	3d quality sheet	.. 20	.. ..
LEAD	American, per 100 lbs.	.. ..	.. ..
	German " Gold	7 25	7 50
	Spanish "	7 25	7 50
	English "	7 25	7 50
	Bar, per 100 lbs.	11 50	.. ..
	Pipe and sheet	11 44	.. ..
TIN	Banca Gov., per 100 lbs. gold	19½	20
	Straits	18½	19
	English	..	19½
TIN PLATES	IC 10-14 prime charcoal	15 50	.. ..
	IX 10-14 " "	18 50	.. ..
	IC 12-12 " "	16 00	.. ..
	IX 12-12 " "	19 00	.. ..
	IC 14-20 " "	16 50	.. ..
	IX 14-20 " "	19 50	.. ..
	IC 14-20 Roofing ch. 1st	14 75	.. ..
	IC 14-20 " " 2d	13 75	.. ..
	IC 14-20 " Coke	12 25	.. ..
	IC 10-14 Coke	12 00	14 50
SPELTER	Lehigh, per lb., gold	6⅞	.. ..
	Foreign " "	6½	.. 11
ZINC	Mussulman & Amer.	.. 14	.. 14½
SOLDER	No. 1	.. 24	.. ..
	No. 2	.. 22	.. ..
QUICKSILVER		.. 86	.. ..

LONDON METAL MARKET.

LONDON, June 22, 1866.

		£.	s.	d.	£.	s.	d.
COPPER	Best selected, per ton	89	0	0	@..	..	..
	Tough Cake & Tile, per ton	86	0	0	..	..	..
	Burra Burra " "	90	0	0	..	..	..
	Copper wire, per lb.	0	0	11¾	..	..	..
	" tubes, "	0	0	12¼	..	..	..
	Sheathing & Bolts, per ton	91	0	0	..	..	..
	Bottoms, "	96	0	0	..	..	..
	Old (Exchange)	77	0	0	..	..	..
IRON	Bars Welsh in London	7	2	6	8	5	0
	Do. to arrive	7	0	0	7	5	0
	Nail rods	8	5	6	9	5	0
	Do. Stafford in London	8	10	6	8	17	6
	Bars " "	8	10	6	10	0	0
	Hoops " "	9	10	6	10	10	0
	Sheets, single	10	0	0	11	0	0
	Pig No. 1 in Wales	4	5	0	4	10	0
	Refined Metal, do.	4	0	0	5	0	0
	Bars Common do.	6	5	0	6	10	0
	Do. Merch. Tyne or Tees	7	10	0	..	..	..
	Do. Railway in Wales	6	0	0	6	5	0
	Do. Swede in London	11	0	0	..	..	..
	To arrive	11	0	0	..	..	..
	Pig No. 1 in Clyde	2	13	0	2	18	0
	Do. f. o. b. Tyne or Tees	2	9	6	..	..	..
	Do. Nos. 3, 4, f. o. b. Do.	2	5	6	2	5	6
	Railway Chairs	5	10	0	5	15	0
	Do. Spikes	11	0	0	12	0	0
LEAD	English Pig Common	20	0	0	20	5	0
	Do. ordinary soft	21	0	0	21	5	0
	Do. (W. B.)	22	10	0	..	..	..
	Do. Sheet	21	10	0	21	15	0
	Do. Red Lead	23	10	0	24	0	0
	Do. White	27	0	0	30	0	0
	Do. Patent Shot	20	0	0	..	..	..
	Spanish	20	5	0	20	10	0
STEEL	Swedish in kegs, rolled, p ton	13	0	0	14	0	0
	Do. hammered	15	0	0	16	0	0
	Do. in faggots	16	0	0	16	10	0
	English spring	19	0	0	23	0	0
QUICKSILVER	Per bottle	7	0	0	..	..	..
SPELTER	Foreign, per ton	25	0	0	..	..	..
	To arrive "	25	0	0	..	..	..
ZINC	In Sheets	30	0	0	..	..	..
TIN	English Blocks	85	0	0	..	..	..
	Do. bars in barrels	86	0	0	..	..	..
	Do. refined	88	0	0	..	..	..
	Banca	78	0	0	..	..	..
	Straits	75	0	0	..	..	..
TIN PLATES*	IC Charcoal, 1st qu., per box.	1	10	0	..	..	..
	IX Do., 1st quality "	1	16	0	..	..	..
	IC Do., 2d quality "	1	8	0	..	..	..
	IX Do., 2d quality "	1	14	0	..	..	..
	IC Coke	1	4	0	..	..	..
	IX Do.	1	10	0	..	..	..
	Canada Plates, per ton	13	10	0	..	..	..
	In London; 20s. less at the works.						
YELLOW METAL	Sheathing, p lb.	0	0	8½	..	..	..
	Sheets, per lb.	0	0	8½	..	..	..
INDIAN CHARCOAL	Pigs, in London.	7	0	0	7	10	0

* At the works, 1s.@1s. 6d. less.

SALES OF ORES IN ENGLAND.

LEAD ORES

DATE.	TONS.	PRICE PER TON.	PURCHASERS.
June 1—Great Laxey	100	£22 5 6	Stock & Co.
—Minera	319	13 3 6	Walker, Parker & Co.
7—Min'n B'd'ry, &c.	30	13 13 6	Walker, Parker & Co.
— ditto.	4	6 10 0	ditto.

BLENDE.

DATE.	TONS.	PRICE PER TON.	PURCHASERS.
June 1—Minera	105	£ 4 0 6	Kenrick & Son.
— ditto.	63	4 0 0	ditto.
— ditto.	45	4 5 0	H. Southern.
— ditto.	27	4 18 0	ditto.
4—Coetia Llys	114	3 8 6	Vivian & Sons.
—Maes-yr-Elwddu	59	2 3 6	Kenrick & Son.

BLACK TIN.

SOLD MAY 31.

	TONS.	C.	Q.	LBS.	P. PER T.	AMOUNT.	PURCHASERS.
Pedn-an-drea United	10	2	1	7	—	£459 16 0	Carvedras.

COPPER ORES.

SOLD AT SWANSEA, JUNE 5.

MINES.	TONS.	PRICE.	MINES.	TONS.	PRICE.
Moonta	1164	£14,350 15 6	Berehaven	297	£2,099 18 6
Wallaroo	764	5,503 17 0	Leghorn	15	181 12 0
Del Seto	81	1,005 5 0	African	1	21 3 0
Hoz de B'r'na	23	207 11 6	Cobre	558	5,987 10 0

BY WHOM PURCHASED:

NAMES.	TONS.	AMOUNT.
Vivian & Sons	524½	£4,530 19 6
Freeman & Co.	116	1,467 0 0
Greenfell & Sons	194	1,665 4 0
Sims, Willyams & Co.	203	2,463 2 0
Williams, Foster & Co	455½	4,463 8 3
Mason & Elkington	246½	2,879 14 6
Bankart & Sons	286½	3,332 12 3
Crown Copper Company	190½	1,439 2 9
Charles Lambert	364	4,629 7 6
Copper Miners' Company	322½	2,489 0 9
Total	2,903	£29,357 12 6

TOTAL AND AVERAGES.

	21 CWTS.	PRODUCE.	PRICE.	STANDARD.
British	297	9¾	£ 7 1 5	£95 12 0
Foreign	2,606	14½	10 9 2	89 19 6
Whole sale	2,903	13¼	£10 2 3	£93 6 0

SAN FRANCISCO STOCK MARKET.

LATEST BY MAIL.

NAME.	FRIDAY, June 8. Open'g	Clos'g	Sales for week Ending June 8. Shares.	Amount.
Sierra Nevada	$ 6	$ 6	230	$ 1.312 00
Imperial	107½	108	194	20.653 00
Gould & Curry	715	715	7	5.325 00
Chollar—Potosi	207	212½	437	151.351 00
Yellow Jacket	505	650	255	152.491 00
Bullion	52½	57½	328	20,462 00
Crown Point	.....	.....	4	3.940 00
Belcher	150	160	55	9.044 00
Overman	20	26	1206	36.618 00
Ophir	295	300	240	67,528 00
Hale & Norcross	940	950	10	10.500 00
Exchequer	.....	.....	110	750 00
Savage	850	860	17	14.075 00
Empire Mill	.....	.....	6	886 00
Alpha	225	225	1	190 00
Lady Bryan	1¼	1¼	180	191 00
Daney	.....	.....	10	75 00
Confidence	20	20	254	7,227 00
Baltimore Amer.	.....	.....	....	.....
Central No. 2	.....	.....	....	.....
Kentucky Cop. Co	.....	.....	....	.....
Golden Rule	.....	.....	40	655 00

LATEST BY TELEGRAPH.

SAN FRANCISCO, June 30.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	700	Crown Point	900
Savage	900	Yellow Jacket	700
Chollar-Potasi	190	Belcher	175
Ophir	225	Alpha	200
Hale and Norcross	1200	Imperial per share	100

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office:

55,803.—WATER WHEEL.—Samuel W. Ayres, Monticello, Ind.:

In combination with the spiral scroll, A, I claim the double wheel, B. C. when so arranged that the water shall be discharged from the scroll through the upper section, towards the centre, and thence passing into the lower section be discharged from the centre through the periphery, substantially in the manner set forth.

55,818.—TREATING ORES.—Charles F. Carpenter, Louisville, Ky.:

I claim the mode of using steam of any temperature for the purpose of facilitating the process for extracting gold and silver from ores, and consists in introducing said steam into a reverberatory furnace between the flame of said furnace and the ores containing gold or silver which are spread upon the hearth of said furnace, as herein described, or any other substantially the same.

55,822.—PUMP FOR DEEP WELLS.—Robert Cornelius, Philadelphia, Pa.:

I claim the combination of an outer case with apertures, an in-

UNITED STATES SECURITIES.

Reported for the Journal of Mining by Messrs. MEIGS, VON SEYBOLD & CO., No. 4 Broad st., New York.

Friday Evening.

LOANS. INTEREST PAYABLE IN GOLD.	AUTHORIZING ACTS.	AMOUNT OUTSTANDING.	RATE.	PRIN. PAY.	INTEREST.	WHEN PAYABLE.	OFF. PER CENT.	ASKED PER CENT
Registered Bonds	28 January, 1847	$9.415.250	6	1867	.....	Jan. July.	129	129⅛
Coupon "							.....	.....
Registered Bonds	31 March, 1848	8.908,342	6	1868	.....	Jan. July.	125	125
Coupon "							124	125⅛
Registered Bonds	22 June, 1860	7.022,000	5	1871	.....	Jan. July	100	.....
Coupon "							102	.....
Registered Bonds	14 June, 1858	20,000.000	5	1874	.....	Jan. July.	98	100
Coupon "							98½	98⅝
Bonds, March 3, 1863		.....	6	1881	.....		.....	.....
Oregon War Debt		1.016.000	6	1881	.....	Jan. July.	103	103
Registered Bonds	8 Feb. & 17 July & Aug., 1861	282.295.500	6	1881	.....	Jan. July.	108	109
Coupon "							108	.....
Registered "	25 February, 1862 (5-20's)	514.780,500	6	1882	.....	May Nov.	.....	104⅛
Coupon "							.....	.....
Registered "	(5-20's) new issue	100.000,000	6	1884	.....	May Nov.	104⅛	104⅛
Coupon "							104	.....
Bonds, March 3, 1865	(5-20s)	80,734,500		1885	.....		.....	.....
Registered "	(10-40's)	171.219,100	5	1904	.....	Mar. Sept.	.....	.....
Coupon "							.....	.....
Total April 1								

LOANS. INTEREST PAYABLE IN LAWFUL MONEY.	RATE.	AMOUNT OUTSTANDING.	PRINCIPAL PAYABLE.	INTEREST.	WHEN PAYABLE.	OFF.	ASKED.
AUTHORIZING ACTS.							
Bonds, Cent'l P. R. R. Co., July 2, 1864	6	$2.362.000 00	1895	.....	Jan. July		
Bonds, Union P. R. R. Co., July 2, 1864	6	2,130.000 00	1895	.....	.....	.....	.....
Temporary Loan	4		10 days' notice	.....	.....	.....	.....
Temporary Loan	5	124,561.486 00	10 days' notice	.....	.....	.....	.....
Temporary Loan	3		10 days' notice	.....	.....	.....	.....
Certificates of Indebtedness, March 1, 1862	6	45.025,000 00	1 yr from date	.....	1 yr. fr. date	.....	.....
1 and 2 Years' Notes, March 3, 1863	5	.....	.....	.....	1 yr. fr. date	.....	.....
3 Years' Compound Interest Notes (March 3, 1863 / June 20, 1864)	6	162.012.140 00	3 yrs from date	.....	At maturity		
3 Years' Treasury Notes (June 30, 1864 / March 3, 1865)	7.3	.....	3 yrs from date	.....	Aug. Feb.	103⅛	103¼
3 Years' Treasury Notes, March 3, 1865	7.3	812.221,600 00	3 yrs from date	.....	June Dec.	103⅛	103¼
3 Years' Treasury Notes, March 3, 1865	7.3	.....	3 yrs from date	.....	July Jan.	103⅛	103¼
Aggregate of Debt Bearing Lawful Money Interest. April 1			Total Interest				

terior wire gauze or perforated screen, and a receptacle below for the debris, substantially as described.

55,875.—WATER WHEEL.—Louis Kratzer, Baltimore, Md.:

I claim the arrangement of the wheels, A, B and C, so as to make use of the whole body of water in its descent to the level below, and its action in passing off, as herein set forth and described.

55,884.—WELL BORING APPARATUS.—David Morris, Bartlett, Ohio:

I claim, 1st, A drill having two or more wings, W, with their cutting edges constructed and arranged as herein described and represented.

2d, The tube, H', provided with a valve, h, and attached to, and moving with, the drill-rod, h, substantially as and for the purpose explained.

3d, The combination of the circular frame, A, cogged rim, C, rotating and revolving shaft, D1, pinion, D2, crank-wheel, F, connecting-rod, G, rope, I, and drill, H, the whole being constructed and arranged as herein described and represented.

4th, The combination of the cogged rim, C, and gearing, S, S, with the beveled gear, R, winch-lass, Q, shifting-rod, S', rope, N, and adjustable block, L, the whole being arranged to operate in the manner and for the purpose set forth.

55,970.—PETROLEUM TANK.—Paul Jacovenco, Bucharest, Wallachia:

I claim the herein-described apparatus for preserving or storing petroleum and other oils, the same consisting of two concentric cylinders, the space between them being divided by a transverse partition, and communicating with the interior cylinder by means of apertures, as described, in combination with pipes arranged for operation as and for the purpose set forth.

Special Scientific Brevities.

☞ The French government has offered a prize of fifty thousand francs for the discovery of the method by which voltaic electricity may be made applicable to manufactures as a source of heat, to illumination, to chemistry, mechanics, or practical medicine. The offer is open for five years, from April 18, 1866.

☞ If a tube connected with water, and a solid rod also connected with water, be applied at once to the ears, sound will be heard only in the ear supplied with the tube. The reason is that the tube is so much the better conductor that it kills whatever sound is transmitted through the water.

☞ A fluteless flutist is spoken of in Havre, France, as performing wonderful things. He makes a flute out of his left hand, which he holds to his mouth, using the right in lieu of stops. The notes he produces are not to be distinguished from those of the real instrument.

☞ A Viennese philosopher is experimenting upon the transportation of ponderable bodies by electricity, so that the old fable of the soldier who sent his old shoes home for exchange by hanging them on the telegraph wire, may be realized.

☞ The last return of the cost of the iron-clad ships of England is as follows: *Warrior*, £310,000; *Black Prince*, £239,000; *Defense*, £217,000; *Resistance*, 255,000; *Hector*, 244,395; and *Achilles* £389,219.

☞ It is stated that a few drops of a solution of pennanganate of lime, added night and morning to breeding tanks, sweetens water, supplies oxygen and thus diminishes the mortality in fish hatching.

☞ It has been ascertained that nitrogen in large quantities is so necessary to the life of plants that vigorous vegitation cannot take place if there is no other supply of nitrogen than the air.

☞ The different varieties of coffee lose in the operation of roasting from fifteen to twenty-five per cent. in weight, and gain from thirty to forty per cent. in bulk.

☞ A single ounce of gunpowder, placed at an angle of forty-five degrees, is capable of projecting a twenty-four pound ball a distance of three hundred and fifty yards.

☞ The flowers of plants evolve ozone, the great purifier of the atmosphere. Tropical flowers evolve more of this substance than those of the temperate latitudes.

☞ At the height of five hundred feet above the earth, a cubic inch of air would expand so much as to fill a space equal in diameter to the orbit of Saturn.

☞ Polished surfaces of steel and iron may be prevented from rusting by exposure to water, if they are coated over with a mixture of lime and oil.

☞ In making iron, the weight of the air admitted to the furnace is more than the weight of all the coal, ore, and limestone used.

☞ The fertile Nile mud contains about six per cent. of organic matter, with about sixteen per cent. of soda, lime, potassa and alumina.

☞ Platinized copper vessels are said to equal those of platinum for containing strong acid, etc., and are much cheaper.

☞ Sugar, gum and starch have exactly the same chemical composition, and are represented by the symbol C10, H10, O10.

All Sorts.

☞ The Emperor of Austria has disentomed from the historic collections of the Vienna museum, the original coat of arms of Montezuma, and a worm-eaten letter in the hand of Cortez. These relics, from the Escurial, at the time of the wars of Austria with Spain, have now been handed over to a prominent Austrian diplomatist, who is deputed to deliver them to Maximiltan as a "gift" of his brother.

☞ Archæological searches in Palestine have nearly settled the site of ancient Capernaum upon the present Tel Hum. The White Synagogue has been dug out, and there is little doubt that this is the identical edifice built by the Roman officer, and one of the structures in which Christ prayed and taught—the only one now to be traced. Its plan and ornaments have been made out and copied.

☞ In *Blackwood's Magazine* is an article on "Demonology at Home and Abroad," in which the writer states that as late as August, 1863, a man eighty years of age was flung into a small stream in the parish of Sible Hedingham, and "swum for a wizard" and died of his maltreatment, in Christian England.

☞ Mr. Throckmorton, who owns a ranche, embracing some 20,000 acres, in Marin county, has recently discovered a stump on his grounds which takes the palm from the big trees of Calaveras county. This stump is fifty-five feet five inches in diameter, and is now used by Mr. T. for a corral.

☞ It is estimated that upward of 800,000 sewing machines have been manufactured in the United States since Mr. Howe introduced his invention, and that several millions of dollars are invested in the business. The Wheeler & Wilson Manufacturing Company employs a capital of 1,000,000.

☞ One of the Government revenue detectives on the Canadian frontier writes to the Commissioner of Customs that the smugglers have laid pipes across the St. Lawrence river, and are engaged in pumping whisky from Canada to the United States.

☞ An enormous bronze cannon cast at Metz, in 1857, is about to be brought to Paris. Its length exceeds thirteen feet, its calibre one foot, and its weight twelve tons. It will be consigned to the Museum of Artillery.

☞ Josh Billings says: "I always advise short sermons, especially on a hot Sunday. If a minister kant strike ile in boring forty minutes, he has either got a poor gimblet or else he is boring in the wrong place."

☞ Robert Tyler, in a recent letter, estimates the losses of the Southern States as a result of the war, at the enormous sum of $1,500,0000,000, which includes the item of $1,700,000,000 for emancipated slaves.

☞ A Western paper announces: A cow was struck by lightning and instantly killed, belonging to the village physician, who had a beautiful calf four days old.

☞ The Duchess Colonna, an ameteur sculptor, has just finished a bust of the Empress of the French, which is to be placed in the Hotel de Ville.

☞ The Connecticut Arms Company are manufacturing a sheep-shearing machine which is said to be a marvel of mechanical triumph.

☞ A newspaper states: A child was run over by a wagon three years old and cross-eyed with pantalets on which never spoke afterward.

☞ A very elegant way of sealing bottles consists in using a mixture of gelatine and glycerine.

WHAT IS SAID OF THE "JOURNAL OF MINING" BY THE PRESS.

From the Rocky Mountain (Denver) News, June 13.

THE AMERICAN JOURNAL OF MINING.—We receive this valuable paper regularly from its office of publication, 37 Park Row, New York, and find it one of our most prized mining exchanges. It is weekly filled with valuable and interesting matter to miners and mill-men, and should receive a large subscription list from Colorado.

From the London Mining Journal, May 26.

MINING LITERATURE.—Amongst the recent additions to mining literature in the New World, the AMERICAN JOURNAL OF MINING is worthy of especial mention; it is to mining and the allied sciences, so extensively carried on in the United States, what the *Scientific American* is to the mechanical sciences generally. The paper and printing are far superior to the ordinary newspapers of the States, and both skill and judgment are displayed in the editorial department. Six numbers have already appeared, and the same amount of care is apparent in all.

From the New Yorker Handels-Zeitung.

[TRANSLATED.]

The first number of the *American Journal of Mining*, edited by Mr. George F. Dawson, is before us and we welcome it. We think the *Journal* has made its appearance just in the right time.

PROSPECTUS.

THE NECESSITY FOR A THOROUGHLY RELIABLE medium of information upon MINING MATTERS has been seriously felt by those interested in the mines and mills of the United States. THE AMERICAN JOURNAL OF MINING supplies that want.

It is under the editorial control of GEORGE FRANCIS DAWSON, whose reputation is too well established to require, on our part, any comment.

There is amply sufficient capital invested in the JOURNAL OF MINING to insure its complete success.

THE JOURNAL OF MINING contains—or will contain in future issues:

Seventeen wide, solid columns of condensed, summarized Mining (including Petroleum) intelligence from all parts of the American Continent.

Four to Five Columns of Editorial articles upon topics of interest to the mining community.

Two to Four Columns of original and selected papers on Mineralogy, Geology, Metallurgy, Assaying, Mining and other Scientific Subjects.

Five to Ten Columns of judiciously selected miscellaneous articles relative to mining, the kindred sciences, etc.

Carfully Compiled Directories of Petroleum, Gold, Silver, Copper and other American Mining Companies.

Latest Quotations of Mining and Petroleum Stocks in the New York, Philadelphia, Boston and San Francisco Markets.

Nevada Mining Stocks reported by Trans-continental Telegraph.

Latest Reports of the London and New York Metal Markets; with lists of Copper sales at Swansea and Redruth, England.

A valuable Table, showing the current market values of the various classes of Federal Securities.

A convenient list of the New York current prices of chemicals, and implements used in Assaying.

A reliable list of Standard Works on Mineralogy, Geology, Metallurgy, Assaying, Mining, etc.

THE JOURNAL OF MINING also publishes reports of scientific experts relative to noteworthy mines and works; and beautifully illustrated Descriptions of new processes and recent inventions in Mine and Mill machinery. It is printed in the best possible manner, upon a very superior quality of paper, and forms a compendium of trustworthy information that must prove invaluable to mine-owners, practical miners, Mineralogists, Geologists Metallurgists and others.

Each number of the JOURNAL OF MINING comprises sixteen pages of interesting and valuable reading matter; two volumes per annum, each containing Four hundred and sixteen pages, forming an excellent and almost indispensable work of reference for all interested in Mining, Milling, etc.

☞ Published every Saturday, at 12 o'clock, M.

TERMS

SUBSCRIPTION.		ADVERTISING.	
Per annum, one copy	$4 00	One Line [Nonp] 1 inser'n.	0 30
Six months, one copy	2 25	One Square, 10 lines, 1 do.	2 00
Three months, one copy	1 25	One Square, do. 4 do.	5 00
Single copy	0 10	One Square, do. one year,	40 00

Canadian Subscribers 25 cents extra for postage.

☞ Specimen Copies sent free.

Address WESTERN & COMPANY,
No. 37 Park Row, and 145 Nassau St., New York City.

CANVASSERS WANTED.—CANVASSERS WANTED in every city, town and village, for the AMERICAN JOURNAL OF MINING. Extra inducements offered to energetic, faithful men. Specimen copies furnished free of charge. Address
WESTERN & COMPANY, 37 Park Row, New York.

TO THE MINING PUBLIC.—THE SUBscribers are now prepared to receive either Gold or Silver Ores, by the Ton or smaller quantity, and make a fair working test of same, and respectfully invite all who are interested in Minerals to call and examine their process for extracting the Precious Metals. They are also prepared to make the usual Fire Assay.

Our Works are at the foot of North Third Street, Brooklyn, E. D. They can be reached either by Grand Street Ferry, or by Greenpoint cars, which pass the door.

CHARGES.

Testing	1 lb. of Ore	$3 00
"	5 "	5 00
"	10 "	7 00
"	50 "	10 00
"	100 "	15 00
"	1 ton "	25 00

FIRE ASSAYS.

Gold and Silver	combined	$5 00
" "	separate	7 00

11-ps BARBER & WYCKOFF.

FIRE-PROOF IRON TANK STORAGE COMPANY
Transfer office, 38 Broad street, 14-qp

SCHOOL OF MINES, COLUMBIA COLLEGE,

EAST 49th STREET, NEW YORK.

FACULTY:

F. A. P. BARNARD, S.T.D., LL.D., President.
T. EGLESTON, JR., E. M., Mineralogy and Metallurgy.
FRANCIS L. VINTON, E. M., Mining Engineering.
C. F. CHANDLER, Ph. D., Analytical and Applied Chemistry and Geology.
JOHN TORREY, M.D., LL.D., Botany.
CHARLES A. JOY, Ph. D., General Chemistry.
WILLIAM G. PECK, LL.D., Mining Surveying.
JOHN H. VAN AMRINGE, A.M., Mathematics.
OGDEN N. ROOD, A.M., Mechanics and Physics.

The plan of this School embraces a three years' course for the degree of ENGINEER OF MINES, or BACHELOR OF PHILOSOPHY

For admission, candidates for a degree must pass an examination in Arithmetic, Algebra, Geometry and Plain Trigonometry. Persons not candidates for degrees are admitted without examination, and may pursue any or all of the subjects taught. The next session begins October 1, 1866. The examination for admission will be held on June 25, 26, and September 28, 29. For further information, and for catalogues, apply to

3-qp DR. C. F. CHANDLER, Dean of the Faculty.

INCRUSTATION OF

STEAM BOILERS.

This greatest of evils in the use of steam is entirely prevented by the "Anti-Incrustation Powder" of

H. P Winans, 11 Wall Street, New York.

INVENTED AND INTRODUCED IN 1855.

now ten years in successful operation in over 6,000 boilers, without injury, and saving many times its cost in fuel and repairs.

A clean boiler generates steam more freely, and will outlast ten dirty or incrusted ones. 14-ps

DESULPHURIZING PROCESS.

Patented by B. Keith, A. Baur and N. S Keith,

SEPTEMBER 9TH, 1862.

Parties desirous of procuring the right to use the process, and INFORMATION OF THE LATEST AND MOST IMPROVED MACHINERY FOR REDUCING ORE.

Can apply to B. KEITH, 41 Liberty Street, New York,
Or to
11-ps A. BEHR & N. S. KEITH, Black Hawk, Colorado.

THE ERICSSON

CALORIC ENGINES,

FOR

PUMPING & HOISTING IN MINES.

PORTABLE ENGINES,

HOISTING GEAR, PUMPS, Etc.

☞ Jobbing Done. ☜

JAMES A. ROBINSON,

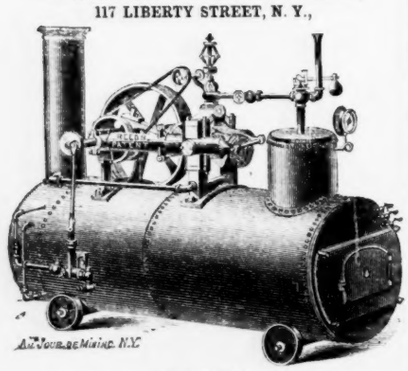
164 DUANE STREET, (CORNER HUDSON,)

New York.

REED & COGSWELL,

CONSULTING ENGINEERS,

117 LIBERTY STREET, N. Y.,



MANUFACTURERS OF

Slide and Oscillating, Stationary and Portable

ENGINES,

OF ALL SIZES.—ALSO FURNISH ALL KINDS OF

Machinery Tools and General Supply.

☞ Drawings of all kinds of Machinery executed to order.

JOHN A. REED. [9-ps] W. B. COGSWELL.

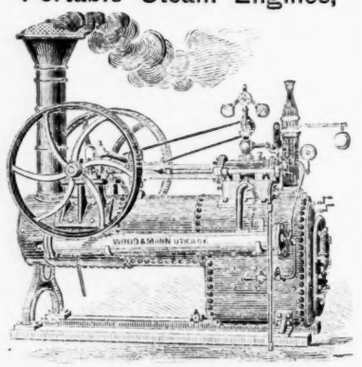
THE HORACE WATERS GRAND, SQUARE and UPRIGHT PIANOS, MELODEONS and CABINET ORGANS, wholesale and retail. To let, and rent allowed if purchased. Monthly payments received for the same. Second-hand pianos at bargains, from $60 to $225. Factory and Warerooms, 481 BROADWAY. Cash paid for second-hand pianos. Pianos tuned and repaired. Sheet Music, a little soiled, at 1½ cents per page.

11-xs HORACE WATERS.

WOOD & MANN STEAM ENGINE CO.'S

CELEBRATED

Portable Steam Engines,



FROM 4 TO 35 HORSE POWER.

Also, Portable Saw Mills.

We have the oldest, largest and most complete works in the United States, devoted exclusively to the manufacture of Portable Engines and Saw Mills, which, for simplicity, compactness, power and economy of fuel, are conceded by experts to be superior to any ever offered to the public.

The great amount of boiler room, fire surface and cylinder area which we give to the rated horse power, make our Engines the most powerful and cheapest in use; and they are adapted to every purpose where power is required.

All sizes constantly on hand, or furnished on short notice.

Descriptive circulars, with price list, sent on application.

WOOD & MANN STEAM ENGINE CO, Utica, N. Y.,
12-qp Branch Office, 96 Maiden Lane, New York City.

Great Improvements

IN

SEWING MACHINES.

EMPIRE SHUTTLE MACHINE!

SALESROOMS:

No. 536 Broadway, N.Y., and No 250 Washington street, Boston.

This Machine is constructed entirely on new principles of mechanism, possessing many rare and valuable improvements, having been examined by the most profound experts, and pronounced to be SIMPLICITY and PERFECTION COMBINED.

It has a straight-needle perpendicular action, makes the LOCK or SHUTTLE STITCH, which will neither RIP nor RAVEL, and is alike on both sides; performs perfect sewing on every description of material, from Leather to the finest Nansook Muslin, with cotton, linen or silk thread, from the coarsest to the finest number.

Having neither CAM nor COG WHEEL, and the least possible friction, it runs as smooth as glass, and is emphatically

A NOISELESS MACHINE!

AGENTS WANTED for all Towns in the United States where Agents are not already established, to whom a liberal discount will be given.

Empire Sewing Machine Company.

H. W. ALDEN, President.
GEO. W. STAKE, Secretary and Treasurer. 6.xm

OFFICE FIRE-PROOF

Iron Tank and Storage Co.,

38 BROAD STREET, BASEMENT.

Incorporated by special Act of the Legislature, April 10, '66.

TO CIVIL ENGINEERS.

Sealed proposals will be received at this office, till the 1st of July, 1866, for surveying and laying out a route from Corry, Pennsylvania, to New York, or some point on the Hudson, for the laying of a transportation pipe to conduct oil to sea board.

14-p S. E. MARVIN, Secretary.

PATENT AGENCY.

J. VAN SANTVOORD,

(FORMERLY EXAMINER IN UNITED STATES PATENT OFFICE, AND LATELY WITH MUNN & CO.)

Solicitor for Patents, American and Foreign,

10-i 41 PARK ROW ("TIMES" BUILDING), NEW YORK.

OIL LANDS FOR SALE.

Thirteen Thousand Acres of Land,

in the Canada Oil Regions, in the Townships of Enniskillen, Dawn, Zone, Moore, Brooke and Sombra, for sale or to lease, for Oil purposes, in portions to suit purchasers.

For terms and particulars apply to the proprietor.

4-qp T. D. LEDYARD, 74 Yonge Street, Toronto.

To Inventors and Others.

The proprietors of the AMERICAN JOURNAL OF MINING have connected with their establishment, Artists of experience and skill in

DESIGNING,

WOOD-ENGRAVING, and

LITHOGRAPHY.

Machinery, Buildings, Landscapes, etc., Designed and Engraved or Lithographed from a photograph or a plain comprehensive sketch, or from the object itself. Specimens of work ready for inspection. Terms moderate.

Inventors desirous of applying for Patents on their own account can have drawings for the Patent Office carefully and accurately executed,

AT VERY MODERATE RATES

IMPORTANT AND VALUABLE WORKS

ON MINING, MINERALOGY, GEOLOGY AND METALLURGY.

ANSTED'S Gold Seeker's Manual. 1 vol. 12mo, cloth...$ 1 75

ANTISELL.—The Manufacture of Photogenic or Hydro-Carbon Oils, from Coal and other Bituminous substances, capable of supplying Burning Fluids. By Thomas Antisell, M. D. 1 vol 8vo..... 3 00

BUCKLAND (Rev. Wm.)—Geology and Mineralogy. 2 vols. 8vo, hf. cf 20 00
2 cloth. 8 vo, cloth..... 10 00

BLAKE (Wm. P.)—Report of a Geological Reconnoissance in California. 1 vol. 4to, illst..... 10 00

COQUAND.—Traite des Roches. 1 vol. 8vo, hf. mor..... 5 25

DANA'S Manual of Mineralogy. 1 vol. 8vo. 2 25
Text Book of Geology. 1 vol. 12mo..... 2 00

DEGOUSSEE.—Guides des Sondeur et des Sondages. 2 vols. and Atlas, half mor 19 50

DUFRENOY.—Mineralogie. 5 vols. 8vo..... 20

FOSTER AND WHITNEY.—Report of the Geology of the Lake Superior Land District. The Iron and Copper Regions. 2 vols. 8vo, and maps (scarce)..... 10

FAIRBAIRN.—Iron: its History, Properties, and Processes of Manufacture. By Wm. Fairbairn, C. E., LL. D. 1 vol. 8vo. New Edition 3 75

FEUTCHWANGER.—A Treatise on Gems. 1 vol. 8vo, cloth..... 1 50

GREENWELL (G. C.)—A Practical Treatise on Mine Engineering. Handsomely illustrated. 1 vol. 4to, hf. mor. 27 50

GOODYEAR'S Translation. A Treatise on the Assaying of Copper, Lead, Silver, Gold and Mercury, from the German of Th. Bodeman and Bruno Kerl. 1 vol. 12mo, cloth. 2 50

HUMBLE.—Dictionary of Geology and Mineralogy. Third Edition. 1 vol. 8vo, cloth..... 3 50

HOSKOLD'S Practical Treatise on Mining Land and Railway Surveying, Engineering, &c. 1 vol. 8vo, cloth..... 15 00

JACOBS.—Precious Metals. 2 vols. 12mo..... 12 00

KURR'S Mineral Kingdom. 1 vol. 4to, colored plates.... 15 75

KING (C. W.)—Natural History, Ancient and Modern, of Precious Stones and Gems. 1 vol. 8vo, cloth..... 10 50

KUSTEL.—Nevada and California Processes of Silver and Gold Extraction, for general use, and especially for the Mining Public of California and Nevada; also, a description of the General Metallurgy of Silver Ores. By Guido Kustel, Mining Engineer. Illustrated by accurate engravings. 1 vol. 8vo, cloth..... 8 00

LAMBORN.—Rudimental Treatise on the Metallurgy of Copper. 1 vol. 12mo, limp cloth. Illustrated 1 00
—— Rudimentary Treatise on the Metallurgy of Silver and Lead. 1 vol. 12mo, limp cloth. Illustrated 1 00

LONG (Major S. H.) Account of an Expedition from Pittsburgh to the Rocky Mountains, performed in the years 1819 and 1820. Compiled by Edwin James, Botanist and Geologist for the Expedition. 4 vols. 12mo, hf. cf..... 50 00

McCORMICK.—Arizona; its Resources and Prospects. Pamphlet, 32 pp. with map. By R. C. McCormick (Secretary of the Territory)..... 00 25

MITCHELL'S Manual of Practical Assaying. 1 vol. 8vo, cloth..... 10 50

MAKINS.—A Manual of Metallurgy, more particularly of the Precious Metals, including the Methods of Assaying them. By. G. H. Makins. 1 vol. 12mo, cloth. Illustrated by upwards of 50 engravings..... 3 50

MAP of the "Reese River" Mining District..... 3 00

MULLAN'S Miner's and Traveller's Guide to Oregon, Washington, Idaho, Montana, Wyoming, and Colorado, via the Missouri and Columbia Rivers. 1 vol. 12mo.... 2 00

OVERMAN (Fred.)—A Treatise on Metallurgy; comprising Mining, and General and Particular Metallurgical Operations. 1 vol. 8vo, cloth..... 8 00
—— The Manufacture of Iron in all its Various Branches; including a description of Wood-cutting, Coal-digging, etc. 1 vol. 8vo, cloth. (Scarce)..... 15 00

PIGGOT.—The Chemistry and Metallurgy of Copper. By A. Snowden Piggot, M. D. 1 vol. 12mo, cloth..... 1 50

PHILLIPS AND DARLINGTON.—Records of Mining and Metallurgy; or, Facts and Memoranda for the use of Mine Agents and Smelters. By J. A. Phillips and John Darlington. 1 vol. 12mo, cloth 2 50

PERCY (John).—Metallurgy; the Art of Extracting Metals from their Ores, and adapting them to various Purposes of Manufacture. Vol. 2, Iron and Steel. 1 vol. 8vo, cloth 21 00

SCOFFERN'S Useful Metals and their Alloys. 1 vol., cloth 3 75

SOPWITH (T.)—A Treatise on Isometrical Drawing as applicable to Geological and Mining Plans. 1 vol. 8vo, cloth (very scarce). 15 00

SWEET S. H.)—Special Report on Coal; showing its Distributions, Classification and Cost, delivered over Different Routes to various Points in the State of New York, and the Principal Cities on the Atlantic Coast. By S. H. Sweet, late Deputy Engineer and Surveyor of the State of New York. Transmitted to the Legislature, March, 1865. 1 vol. 8vo, cloth 3 00

TAYLOR.—Statistics of Coal; including Mineral Bituminous Substances employed in the Arts and Manufactures. Second Edition. By R. C. Taylor. 1 vol. 8vo, cloth. .. 6 00

TRURAN (W.)—The Iron Manufacture of Great Britain, Theoretically and Practically considered; including Descriptive Details of the Ores, Fuels, and Fluxes employed, the Preliminary Operation of Calcination, the Blast, Refining, and Puddling Furnaces, Engines, Machinery, etc. Third edition, revised. Illustrated. 1 vol. 4to.... 20 00

WHITNEY.—A Geological Survey of California. Report of Field Work, from 1860 to 1864. By J. D. Whitney. 1 vol. quarto..... 6 00

WHITNEY (J. D.)—Silver Mining Regions of Colorado. paper..... 00 25

Together with a Large Stock of Engineering and Mechanical Books.

For sale by WESTERN & COMPANY, Office JOURNAL OF MINING, 37 Park Row.

☞ Catalogues of Scientific works sent post-paid on application

DUNCAN, SHERMAN & CO.,

BANKERS,

CORNER PINE AND NASSAU STREETS,

NEW YORK,

ISSUE

CIRCULAR NOTES & LETTERS OF CREDIT FOR TRAVELLERS,

AVAILABLE IN ALL THE PRINCIPAL CITIES OF THE WORLD.

MERCANTILE CREDITS

For Use in Europe, China, etc. Also Make

Transfers of Money to California & Oregon, by Telegraph.

12-ps INTEREST ALLOWED ON DEPOSITS.

THE "MINING MAGAZINE,"

DEVOTED TO

Mines, Mining Operations, Metallurgy, &c.,

EDITED AND CONDUCTED BY WILLIAM J. TENNEY,

In 10 Vols., with a copious Index.

A few sets of this valuable work only remaining. Price, $50 per set. [12-1] JOHN F. TROW, 50 Greene Street.

TAYLOR & SCOTT,

Mining Engineers and Surveyors,

48 PINE STREET, NEW YORK,

Will examine and report upon Copper, Lead, Coal, and other Mines; furnish Plans, and, if not at too great a distance from the city, will undertake the management of the same. Surveying of every description attended to.

REFERENCES: Prof. A. A. Hayes, Boston; Gen. A. E. Burnside, Providence, R. I.; S. L. French, Esq., Boston; N. H. S. Lead Co., New York; Black River Mining Co., Boston; H. Williams, Esq., M. E., Canada; Lionel Brough, Esq., Gov. Ins. Mines, London, Eng.; New Hampshire Silver Lead Co., New York; St. Flavien Mining Co.; R. C. Hawkins, Esq., New York and Boston, and others. 13.

JULIUS G. POHLE, M. D.,

FORMERLY OF, AND SUCCESSOR TO,

Dr. JAMES R. CHILTON & CO.,

Analytical and Consulting Chemist,

No 489 BROADWAY, - - - - - NEW YORK

(N. W. COR. OF BROOME STREET.)

Analyses and Assays made of Ores of Gold, Silver, Quicksilver, Lead, Copper, Manganeese, Nickel, etc., etc.: Minerals, Alloys, Petroleum, Commercial Articles, etc 1-tf

CHARLES P. WILLIAMS,

ANALYTICAL AND CONSULTING CHEMIST,

AND

MINING GEOLOGIST,

No. 138 WALNUT STREET, PHILADELPHIA.

Assays and Analyses of Ores, Soils, etc., Executed with Promptness and Accuracy.

EXAMINATION OF, AND REPORTS ON, MINERAL LANDS AND MINES FURNISHED ON APPLICATION. 10-ps

JAY COOKE & CO.,

BANKERS,

In connection with our houses in Philadelphia and Washington, we this day open an office at No. 1 Nassau street, corner of Wall, in this City.

Mr. EDWARD DODGE, late of CLARK, DODGE & CO., New York; Mr. H. C. FAHNESTOCK of our Washington house, and Mr. PITT COOKE, of Sandusky, Ohio, will be resident partners.

We shall give particular attention to the purchase and sale of GOVERNMENT SECURITIES, and to orders for purchase and sale of STOCKS, BONDS and GOLD.

JAY COOKE & Co.

New York, March 1, 1866. 1-tf

IMPORTANT TO MINING COMPANIES INtending to erect Machinery in California, Nevada, Idaho, Montana, Arizona, Mexico, or any part of Pacific coast.

The fact being indisputable that many of the failures in mining operations are caused by not having machinery adapted to working the ore, it is of the first importance to start right on this point.

MR. CYRUS PALMER, one of the proprietors of the Miner's Foundry, San Francisco, has lately arrived, and will remain in New York and vicinity for some months, and is prepared to take contracts to furnish all kinds of mining machinery of the most approved style at short notice, delivered in San Francisco, or at any of the mines on the Pacific coast. He will also, if required, contract to build mills at the mines, and put them in complete running order.

Mr. Palmer has just left the Pacific coast, and is therefore, acquainted with the most approved machinery in use for reducing ore and saving the precious metals. Mr. P. has not only been actively engaged for the last ten years in manufacturing mining machinery, but has had large experience in working mines and reducing ores. On application to his address, 25 Nassau street, by letter or otherwise, he will be pleased to give any information required in regard to mining or other machinery, gratis, to any company, whether they wish to contract or not.

Mr. Palmer refers to the following companies for whom the Miners' Foundry have built mills the past year:

Knickerbocker and Nevada, 70 Cedar street; Lincoln Company 80 Broadway; Cosmos Company, 158 Broadway; Connecticut and Nevada Company, 47 Liberty street; Cobden Company, 17 Broad street; New York Company, 80 Broadway; Tarshish Company, 80 Broadway; Washington, 80 Broadway; Mettacom Company, 144 Chambers street; Consolidated Company, 167 Broadway.

Mr. Palmer can be found at the office of R. H. Vance, Esq., 25 Nassau street, corner Cedar, from 11 to 12 o'clock, daily 1-ps

THE "SHAW" **COPPER MINE.**

Public attention has several times, of late, been directed to the great mineral resources of Canada East, and the riches of the copper fields have been given prominence to by Sir William Logan, in his "GEOLOGY OF CANADA;" and Mr. Herbert Williams, the Superintendent of the

HARVEY HILL MINE,

has done much, practically and by writing, to enable us to form a correct estimate of the immense value of that great mine. In the same *synclinal* there are the copper deposits of Sutton, Shefford, Stukely, Melbourne, Skipton, Chester, Halifax, Leeds, Inverness and St. Mary; and Lot on No. 9, in the 6th Range of the Township of Chester, is

THE SHAW MINE,

which at present may be viewed only as second to HARVEY HILL, from its being less developed. The Copper, which is in the form of purple and yellow sulphurets, is found in the "nacreous" slates; and "green carbonate," associated with quartz, has been discovered in several of the costeens, giving to the copper-bearing schists a considerable wealth. Mr. Herbert Williams, who is highly esteemed by Sir William Logan, as a practical mining engineer, twice visited the property, in January and November, 1865, and reports the results of operations thus:

"No. 1 opening exhibits fair samples of purple and yellow sulphurets, associated with quartz veins.

"No. 2, distant SE. from No. 1 about 200 feet, exhibits wide bands of "nacreous" slates, carrying veins of quartz. This outcrop, for a width of 50 or 60 feet, carries some promising samples of purple and yellow Sulphurets, and, also, the green carbonate in notable quantity." Mr. Williams adds: "Adjoining this, to the SE., is the "VIGER" mining locations, upon which most promising discoveries of copper ore have been made, and are now being opened up; these dip towards, and will, I believe, be found to underlie, to a very considerable extent, the SHAW property."

In November, Mr. Williams reports: "The most important operation, since my previous visit, is the sinking of a shaft, to the depth of about 27 feet, in a band of copper-bearing schist situated to the westward of the openings referred to in my first report. This band has an average width of between 4 and 5 feet, and shows some fine and promising samples of purple and yellow sulphurets of copper, some tons of which have been broken and brought to the surface. The continuation of this band, notwithstanding its being capped over in several places, is discovered by the costeans for a distance of between 500 and 600 feet, and, combined with the very promising appearance of the shaft, warrants my recommending a more vigorous trial of the property."

The contour of the lot presents many advantages for economic mining. The high ground SE. of the Crag road will admit of mining by "adit" or "cross-cut" to a very fair depth, thus dispensing with the use of expensive machinery for many years to come. There is abundance of wood on the property for all mining purposes, as well as for fuel; and one decided advantage which it possesses over the Harvey Hill Mine, is the abundant supply of water from a river passing through the property, which will enable the ore to be dressed at a very moderate cost.

The distance of this mine from the Athabaska station on the Grand Trunk Railway is 15 miles, by a moderately good road, and the transport of materials to and from the mines to that station will not exceed $3 per ton. Athabaska station is 64 miles from Quebec, and 26 from Richmond, on the Portland route. Laborers can be found as required, and at moderate wages.

In following the course of this synclinal in a South-westerly direction, the copper-bearing slates present themselves in several places, and there is no difficulty in tracing them, notwithstanding the absence of gossan, and there are other characteristics observable by which their existence is identified—one of which is the association of chloritide with the slates. The metamorphic action of the copper on the slate is characterized by some peculiar alterations whenever the copper is in contact with it. The discovery of the existence of further quantities of copper may therefore be reasonably expected.

The advantages thus offered by the "Shaw Mine" may be thus summed up:

1st. The existence of Copper ore of available richness in large quantity, and which can be easily worked for sometime by "adit."
2d. The Mine being easily accessible, and only a short distance from the Grand Trunk Railway.
3d. Cheap transport and cheap labor.
4th. Water and wood in sufficient abundance.

These all point out, that if any Copper Mine in Canada can be worked successfully, the "Shaw Mine" offers facilities, which must place it pre-eminently in that category, and encourage its owners to look forward to no distant day for returns, which must be highly remunerative.

Address communications "Proprietors Shaw Mine," care JOURNAL OF MINING, 37 Park Row, New York City. 8-1

BULLION CONSOLIDATED MINING COMPANY, Colorado. Mines in Summit and Clear Creek Counties. Shares, 300,000; Stock, $300,000.

5-ps J. P. WHITNEY, Secretary, 19 Lindall Street, Boston.

INCAS SILVER MINING COMPANY.—Mines in Summit and Gilpin Counties, Colorado. Shares, 300,000; Capital, $300,000.

5-ps J. P. WHITNEY, Secretary, 19 Lindall Street, Boston.

JOB PRINTING.

Plans, Specifications, Bill-Heads, Receipts Letter-Heads, Show-Bills, Cards, Circulars, etc. etc.,

Executed at the office of the AMERICAN JOURNAL OF MINING.

WESTERN & COMPANY,

No 37 Park Row, and 145 Nassau St., New York City.

P. O. Box 5,969

IMPORTANT TO MINERS.

Every description of Analysis and Assays carefully attended to, and returns promptly made, by

WESTERN & COMPANY,

No. 37 Park Row, and 145 Nassau St., New York City.

P. O., Box 5,969.

WANTED—A GENTLEMAN CONVERSant with MINING MATTERS, to represent this Journal.

CONSOLIDATED LINE.

Great Through Route

TO

THE MINING REGION

AND

THE PACIFIC STATES.

The Holladay Overland Mail

AND

EXPRESS COMPANY.

having consolidated the property of the "OVERLAND STAGE LINE" and the "OVERLAND DESPATCH COMPANY"—comprising all the Overland stage lines running west from the Missouri river—and largely increased and improved their stock and coaches, and reduced their rate of fares nearly 25 per cent, will run a

Daily Line of Coaches

to all the principal points in the gold mines of Colorado, Utah, Montana, Idaho, Nevada, California and Oregon.

They are now running daily coaches from TOPEKA, (in connection with the railroad from St. Louis,) via the "Smoky Hill" route; and from ATCHISON, Kansas, (in connection with the Hannibal and St. Joseph Railroad,) and from NEBRASKA CITY and OMAHA, via DENVER CITY, Colorado, to SALT LAKE CITY, in Utah; thence connecting with their line of coaches for Virginia City and Helena, in Montana; Boise City in Idaho; Walla-Walla, Dalles City and Portland, Oregon.

At Denver City, Colorado, connecting with their double daily line of coaches for Central City, Blackhawk and Empire City.

Passengers for New-Mexico and Arizona also connect at Denver, with a tri-weekly line of coaches for Fort Union, Taos, Santa Fe and other points in those territories.

Passengers for Nevada and California connect at Salt Lake City with daily coaches for Austin, Reese River, Virginia City, Nevada, Humboldt and San Francisco, California.

This Company will also, at an early day, run a line of stages from Salt Lake City through the silver mining district of the Parahuagett Valley to Collville, at the head of navigation on the Colorado River.

RATES OF FARE:

Between Topeka, Atchison, Nebraska City, Omaha, and Denver	$125
Between same points and Salt Lake City	250
Between Denver and Salt Lake City	150
Between Salt Lake City and Boise	125
Between Salt Lake City and Virginia City	125
Through tickets from the Missouri River to Boise and Virginia City	350

TIME:

To Denver City 5 days,
To Salt Lake 9½ days,
To Boise 12½ days,
To Virginia City 13 days,
To San Francisco 16 days.

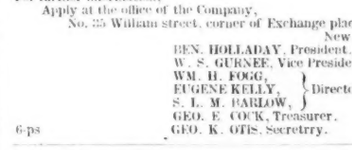
A treasure and freight express, carried on mail time, in charge of trustworthy and competent messengers, to all of the above named points.

For further information,

Apply at the office of the Company,
No. 25 William street, corner of Exchange place,
New York.

BEN. HOLLADAY, President.
W. S. GURNEE, Vice President.
WM. H. FOGG, EUGENE KELLY, S. L. M. BARLOW, } Directors.
GEO. E. COCK, Treasurer.
6-ps GEO. K. OTIS, Secretrry.

E. REMINGTON & SONS,



MANUFACTURERS OF

REVOLVERS, RIFLES,

MUSKETS AND CARBINES,

FOR THE UNITED STATES SERVICE. ALSO

POCKET AND BELT REVOLVERS,

REPEATING PISTOLS,

RIFLE CANES, REVOLVING RIFLES,

Rifle and Shot Gun Barrels, and Gun Materials, sold by Gun Dealers and the Trade generally.

☞ In these days of Housebreaking and Robbery, every house, Store, bank and office should have one of

REMINGTON'S REVOLVERS.

Parties desiring to avail themselves of the late improvements in Pistols, and superior workmanship and form, will find all combined in the new Remington Revolvers.

Circulars containing cuts and description of our Arms will be furnished upon application.

E. REMINGTON & SONS, Ilion, N. Y.
MOORE & NICHOLS, Agents.
64m 40 Cortland streets, New York

KAVANAGH & DECKER'S

BILLIARD TABLES.

We are now prepared to furnish New and Second-hand Tables with our New Patent Cushions, at One Day's Notice.

Illustrated Catalogues and Price Lists sent by mail.

KAVANAGH & DECKER,
5-ps 235 Canal street, New York.

CARD.—Professor H. DUSSAUCE, Chemist, lately from the laboratory of the French Government, left for Europe in the middle of May, where he will reside several months. He takes occasion to inform his numerous friends that he is ready to transact any business there in the chemical line, such as buying books and apparatus, machinery, presses, etc., selling chemical patents, etc. For further information address New Lebanon, N. Y.

NEW YORK ROCK DRILL COMPANY.

OFFICE, 137 BROADWAY.

GEN. E. M. BARNUM, PRESIDENT, . . . G. A. GARDNER, SECRETARY.

This company are prepared to fill orders for Drilling Machines for all kinds of Rock work, for outside work, and for Mining.

The Machines now offered for sale are;

No. 1 Hand machine for ONE man, weighing 100 lbs., with 3 drills, complete.....$ 200 00
No. 2, " TWO " " 125 " " " 250 00
No. 3. 1 horse power Machine, weighing 150 lbs., with 8 ft. steam hose, 3 drills, complete, 450 00
No. 4, 2 " " " 250 " " " " " 850 00

No. 5. Machine for VERTICAL drilling, *without engine*, to drill holes 4 to 6 inches diameter, with timber frame on wheels, &c.....$1,000 00
No. 6, Machine (entirely of iron), drilling at any angle holes 4 to 8 inches diameter, with *nominal* 4 horse power engine (on truck, and moved by own engine), $2,500 to 3.000 00

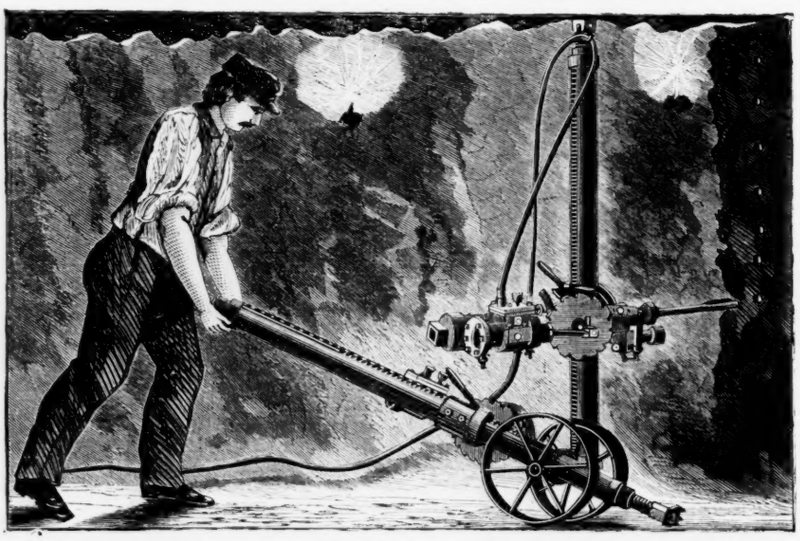
These are the only machines that have done regular work in this Country, and are the most Simple, Compact and Economical. We invite the closest scrutiny. A full sized Mining Drill can be seen daily, drilling into a block of Rockport (Mass.) Granite, the hardest Granite known, at the Machine Shop of STERLING & KERR, No. 344 and 346 West 24th street, West of 10th avenue.

GARDNER'S PATENT ROCK DRILLING MACHINE FOR MINING PURPOSES.

DRIVEN BY STEAM OR COMPRESSED AIR. G. A. GARDNER, PATENTEE, NEW YORK.

Certificate.

NEW YORK, March 25, 1866.
G. A. GARDNER, Sec'y N. Y. Drill Co.:
—After witnessing the operation of your Rock Drilling Engines on several occasions, . . . I am satisfied that they are capable of boring much faster than by HAND in any kind of rock, and will operate with about equal efficiency at any angle in a vertical or horizontal plane; that they can work in confined spaces, such as shafts and drifts of mines, railroad tunnels, etc., etc; that several drills can be used where only one could be operated by hand labor. These Machines may be driven by compressed air. It appears to me highly probable that the time required to open mines by machinery may not be more than one-fourth of that which is now required.
The advantages resulting from such a reduction of the time can hardly be over estimated.
Very respectfully,
GEO. D. EMERSON, Mine Engineer,
Late of Lake Superior, Mich.



Certificate.

No. 95 Liberty street,
NEW YORK, March 23, 1866.
MR. G. A. GARDNER, Secretary N. Y. Rock Drill Co.
DEAR SIR: Respecting the "Gardner Drill," I would say, we used it with perfect success on the Niagara Falls Canal. When we first worked it, we drilled in the solid limestone, holes of the diameter of six inches, at the rate of eighteen inches deep, in twenty minutes.
We used it for several months on the regular work, and found it more economical and effective than any other drill we have ever used. The rock is the hardest kind of blue limestone, with occasional boulders of quartz imbedded in it. You are at liberty to refer parties to me who may desire more particulars.
S. M. ALLEN,
Late President of Niagara Falls Water Power Company

This cut represents a section of a mining tunnel, or *drift*, 6x7½ feet, with two Drilling Engines; one driven by *compressed air*, drilling horizontal holes, the other being moved by the Engineer to its position on a pair of wheels *temporarily* attached to its supporting column; three of these columns, with two machines on each, may be worked in a drift of this size, producing as much working effect as fully seventy-five men. A drift of this size through solid rock (Granite for example) can be thus driven ten lineal feet every 24 hours.

These machines are very compact, measuring—independent of supporting column, etc.—30 inches in length by 12 inches breadth and depth, and weighing only 250 lbs. One man can move and adjust them to the work. The supporting column is held firmly in place by setting out the jack-screw, thus bracing it between the top and bottom of tunnel, or the sides of shaft, and the machines are raised and lowered by a gear working in the rack on side of column, while the attachments to the column form a *universal joint* and allow the machines to work *at any angle*. They are automatic; one engineer can attend to a gang of four or six, working on the same face. Six of them can be worked in a heading four and a half by six feet; and in a shaft six by twelve feet, eight of them can be worked at once. In a railroad, or other large tunnel, an increased number of machines can be operated, being supported and moved upon a carriage running on rails. The blow is struck by the drill being projected by the reactive force of an india rubber spring, against the rock, the drill being as free from the working machinery at the instant of striking, as an arrow shot from a bow; 300 blows per minute can be given with the utmost force the steel drill point can bear. The cross-head to which the drill is attached is drawn back; (thus compressing the spring) by a cam rotated directly by the piston rod of an oscillating cylinder, the drill point has an automatic turning motion, and the entire machine an automatic feel, *self-regulating*, according to the varying hardness of the rock; the machine working equally well with the same adjustment when drilling on flint, or on granite cutting two inches deep per minute, or on mica slate, sandstone, or other softer rocks, cutting four and six inches per minute. They drill equally well at any angle, and with them holes can be put in the most difficult places with great facility.

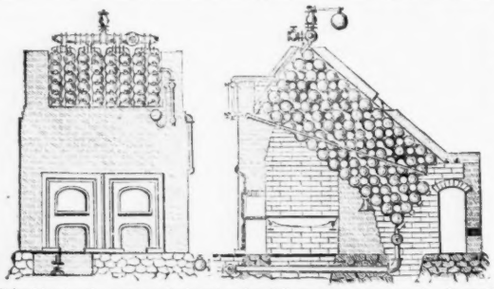
Machines for open cuts have been worked for several years on railroad and canal excavations, operated by four-horse engines drilling four, six and eight-inch diameter holes, and doing the work of fifty men. Rock-Drilling can be done with these machines for one-tenth the cost of hand labor, and in one-tenth the time. We are prepared to furnish machines with *gangs of drills* for splitting granite, marble, etc.; *channelling machines* for marble, etc., when blasting is to be avoided; also machines for cutting the "BEARING IN" in Bituminous Coal Mines: we also manufacture the GARDNER PATENT DRILL POINTS, especially desirable for sinking oil wells; making round holes, requiring no reaming, and cutting faster than any other point. 2-tf

A SAFE STEAM BOILER.

THE HARRISON BOILER.

This New Steam Generator combines essential advantages IN ABSOLUTE SAFETY FROM EXPLOSION, in first cost and cost of repairs, durability, economy of fuel, facility of cleaning and transportation, not possessed by any other boiler.

It is formed of a combination of cast iron hollow spheres—each eight inches in external diameter, and three-eighths of an inch thick, connected by curved necks. These spheres are held together by wrought iron bolts with caps at the ends. The form is the strongest known; its strength to resist internal pressure very great—unweakened as it is by punching or riveting, which lessens the strength of the wrought iron boiler plate about forty per cent. Every boiler is tested by hydraulic pressure at 300 pounds to the square inch.



IT CANNOT BE BURST UNDER ANY PRACTICABLE STEAM PRESSURE.

Under pressure which might cause rupture in ordinary boilers, every joint in this becomes a safety valve. No other steam generator possesses this property of relief, under extreme pressure without injury to itself, and thus preventing disaster.

IT IS NOT SERIOUSLY AFFECTED BY CORROSION, which soon destroys the wrought iron boiler. Most explosions occur from this cause. It has economy in fuel, equal to the best boilers, arising from the large extent and nearness to the fire of its heating surface, as also from the waved line of this surface, which, thoroughly mixing the gases, induces better combustion, and, breaking the flame, causes the heat to be more effectually absorbed than in the ordinary tubular or cylinder boiler.

IT GETS UP STEAM QUICKLY, and with little fuel. It produces superheated steam without separate apparatus, and is not liable to priming or foaming.

IT IS EASILY TRANSPORTED, and may be taken apart so that no piece need weigh more than eighty pounds. In difficult places of access, the largest boiler may be put through an opening one foot square.

IN THIS FACILITY OF TRANSPORTATION IT IS WITHOUT A RIVAL FOR REMOTE MINING DISTRICTS.

IT IS READILY CLEANED INSIDE AND OUT. Under ordinary circumstances it is kept free from permanent deposit by blowing the water entirely out under full pressure once a week. It requires no special skill in its management. Injured parts can be renewed with great facility, as they are uniform in shape and size. When renewed the entire boiler remains as good as new.

A boiler can be increased to any extent by simply adding to its width, and being the multiplication of a single form, its strength remains the same for all sizes. It has less weight and takes less than one-half the ground area of the ordinary cylinder boiler.

ANY KIND OF FUEL MAY BE USED UNDER THIS BOILER, from the most expensive, to refuse coal dust.

For descriptive circulars and prices, apply to

JOSEPH HARRISON, JR., Harrison's Boiler Works, Gray's Ferry Road, adjoining U. S. Arsenal, Philadelphia, Pa.